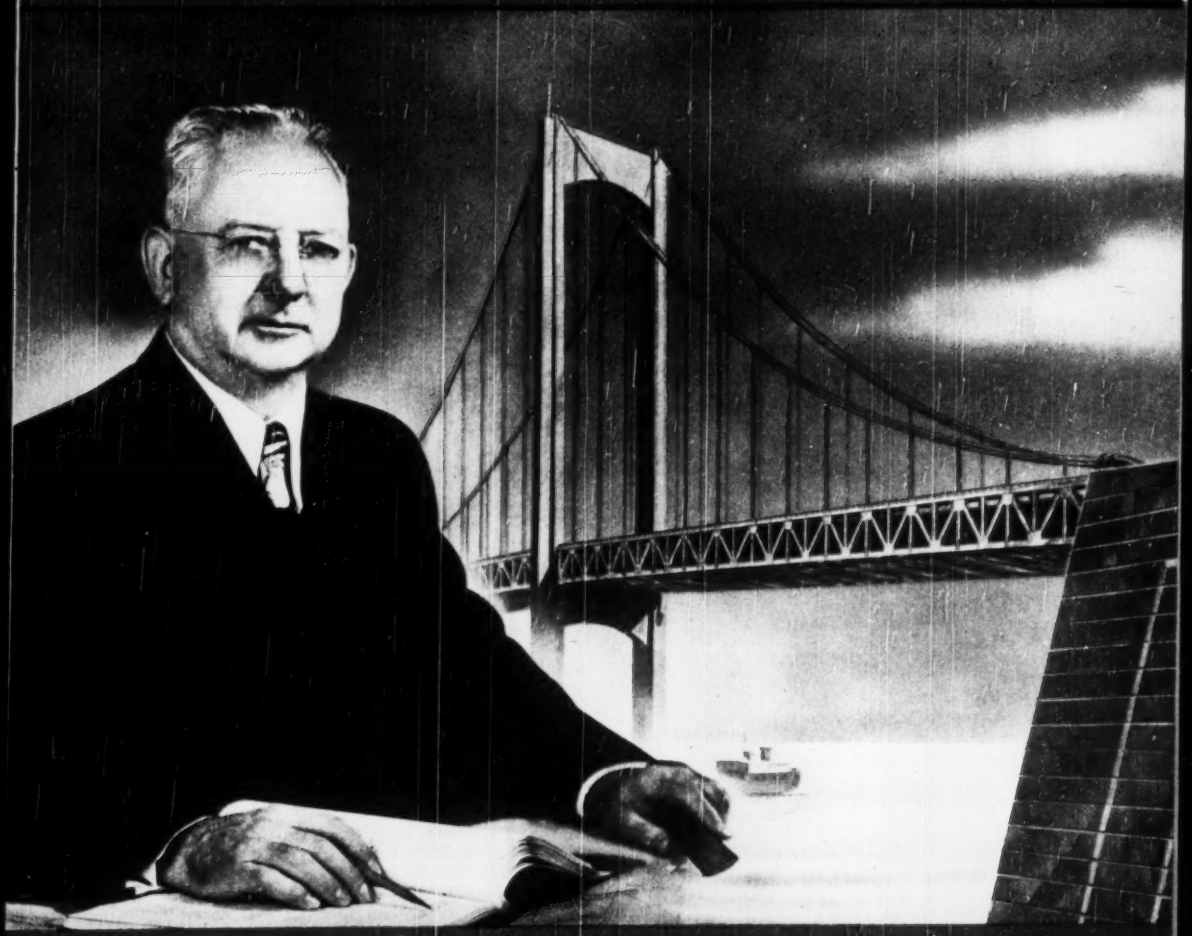
JANUARY 19, 1950

ENGINEERING NEWS-RECORD

SEVENTY-SIXTH YEAR OF PUBLICATION



Louis E. Ayres—ASCE's new president has lunch with partners, see bridge (pp. 19, 29, 34)

★ HUGE CAISSON FOR DELAWARE BRIDGE

★ SEWAGE PLANT FOR A SMALL CITY

A McGRAW-HILL PUBLICATION

tonight...

will this happen to YOUR plant?

Perhaps you're thinking "it can't . . . **my** plant is fireproof— built of steel and concrete!" That's false confidence, for **inside** almost every plant there are many materials that can catch fire. A little carelessness—like piling greasy rags in a corner or dropping a smoldering cigarette—can start a blaze that turns your "fireproof" plant into a roaring inferno.

A plant fire does more than endanger human life. Remember that (1) records that are burned are gone forever; (2) insurance may not pay—at today's prices—for rebuilding your plant; and (3) while you're shut-down, customers go elsewhere . . . and so do skilled employees.

Protect your plant from fire by installing an automatic fire-fighting system **and** by having a water supply for that system in a Horton elevated tank like the one shown at the left. This water reserve is so important that "property owners should be taught that sprinkler efficiency may be measured by water sufficiency*."

The supply is assured because the water in the tank is held in reserve for fire protection purposes only. It is stored **above** your plant and flows—under dependable gravity pressure—the instant a sprinkler head opens. These reliable welded steel tanks are available in capacities from 15,000 to 500,000 gallons. Write our nearest office for information—don't let a fire tonight put you out of business tomorrow.

**Quotation from January, 1949 report of National Fire Protection Association.*

CHICAGO BRIDGE & IRON COMPANY

Atlanta, 3 . . . . . 2135 Healey Building
Birmingham, 1 . . . . . 1520 Brown-Marx Building
Boston, 10 . . . . . 141 Milk Street
Chicago, 4 . . . . . 1401 Prudential Building
Cincinnati, 15 . . . . . 1861 Dalton Building
Detroit, 26 . . . . . 1346 Lafayette Building
Houston, 2 . . . . . 2135 Esperson Building
Kansas City, 6 . . . . . 706 Ambassador Building
Los Angeles, 14 . . . . . 1201 General Petroleum Building
New York, 6 . . . . . 165 Broadway Building
Philadelphia, 3 . . . . . 1700 Widener Building
Salt Lake City, 1 . . . . . 312 Walker Bank Building
San Francisco, 11 . . . . . 1355 Market Street
Seattle, 4 . . . . . 1215 Fourth Avenue
Tulsa, 3 . . . . . 1441 Unity Building

Plants in BIRMINGHAL, CHICAGO, SALT LAKE CITY, and GREENVILLE

In Canada: HORTON STEEL WORKS, Limited, FORT ERIE, ONT.

MORE TONS ARE HAULED ON GOODYEAR TIRES THAN ON ANY OTHER KIND

You bet it's tough!

GOODYEAR'S HARD ROCK LUG is the toughest thing on wheels. It lasts longer, stands up better no matter how rough the going. Try the Hard Rock Lug on your rigs. You'll find it has added protection against cutting, snagging, bruises because the undertread and sidewalls are armored by an extra-tough carcass. And for traction, the Hard Rock Lug has big, husky lug bars that pull equally well forward and reverse. Remember, when the job calls for super-stamina on tough jobs, always BUY and SPECIFY Goodyear—*it pays!*

SURE-GRIP *in earth mover and grader sizes for maximum traction on drive wheels.*

ALL-WEATHER *with world-famous "diamond" tread for flotation and general traction.*

ROAD LUG *dual-purpose tire for mileage and economy both off- and on-the-road.*

We think you'll like "THE GREATEST STORY EVER TOLD"—Every Sunday—ABC Network

GOODYEAR

Sure-Grip, All-Weather, Road Lug—T. M.'s The Goodyear Tire & Rubber Company

"Tag Master"

TAGLINE ADVANTAGES—YOU NEVER HAD BEFORE

1 You can **CAST** a clamshell
2 You can **TWIST** a clamshell
3 You can **SNUB** a clamshell

NOTE FIELD APPLICATIONS

1. **Gravel bed for Dike pump line.** "TAG-MASTER" manual control. Gravel cast over a 25' range without booming or traveling. Considerable time saved; minimum hand spreading.
2. **Picking up rocks.** By **Casting** clamshell without swinging, crane operator reached rocks, set clamshell down with minimum damage.
3. **Digging thru blasted cuts.** Twisting bucket with "TAG-MASTER" control, operator positioned clamshell for picking up long rocks without waste of time. (Could apply to any long object.)
4. **Unloading crushed stone from car.** Ability to **cast** and **twist** enabled operator to reach into corners, minimized hand cleanup. (Could apply to any material in cars.)
5. **Pouring concrete wall.** Swing arc tended to carry bucket away from form. With "TAG-MASTER" control, operator pulled bucket so it followed form as he was swinging.

• ATTENTION •

Shovel Manufacturers
Equipment Distributors
Contractors

Seven years of experience prove the TAG-MASTER trouble-free, easy to operate, economical because of
(1) increased operation and
(2) low cost of operation.

Write for further information

MORIN
MANUFACTURING CO.
WEST SPRINGFIELD, MASS.

ENGINEERING NEWS-RECORD

VOLUME 144 JANUARY 19, 1950 NO. 3

WALDO G. BOWMAN
Editor

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Managing Editor—Eugene E. Halmos, Jr.

Associate Editors—*New York*, V. T. Boughton, (senior associate), F. S. Merritt, R. H. Dodds, J. C. Bumstead, R. N. Larkin; *Cleveland*, J. R. Carr; *San Francisco*, N. A. Bowers, L. L. Wise; *Washington*, V. B. Smith.

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Contributing Editor—Edward J. Cleary.

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Publisher

Member ABC Member ABP

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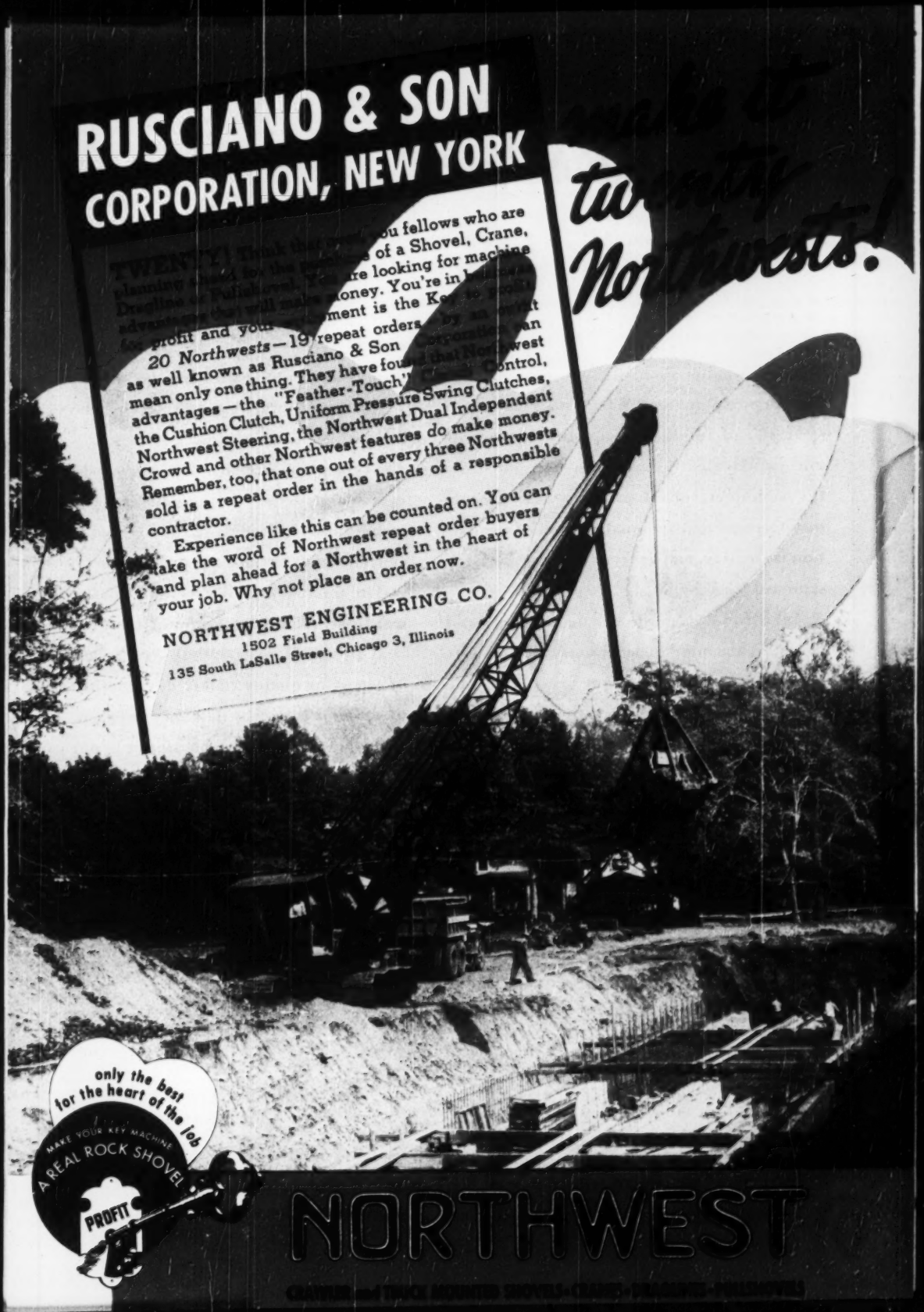

RUSCIANO & SON
CORPORATION, NEW YORK
TWENTY! Think that over, you fellows who are
planning ahead for the purchase of a Shovel, Crane,
Dragline or Pullshovel. You're looking for machine
advantages that will make money. You're in business
for profit and your equipment is the Key to profit.
20 Northwests—19 repeat orders by an owner
as well known as Rusciano & Son
mean only one thing. They have found that Northwest
advantages—the "Feather-Touch" Control,
the Cushion Clutch, Uniform Pressure Swing Clutches,
Northwest Steering, the Northwest Dual Independent
Crowd and other Northwest features do make money.
Remember, too, that one out of every three Northwests
sold is a repeat order in the hands of a responsible
contractor.
Experience like this can be counted on. You can
take the word of Northwest repeat order buyers
and plan ahead for a Northwest in the heart of
your job. Why not place an order now.
NORTHWEST ENGINEERING CO.
1502 Field Building
135 South LaSalle Street, Chicago 3, Illinois
two Northwests!
only the best
for the heart of the job
MAKE YOUR KEY MACHINE
A REAL ROCK SHOVEL
PROFIT
NORTHWEST
CRAWLER and TRUCK MOUNTED SHOVELS • CRANES • DRAGLINES • PULLSHOVELS

Who benefits from Quality Control?

What is Quality Control? What does it do? How does it function? Whom does it benefit?

First and foremost, a quality control operation benefits the customer. It also benefits the manufacturer. It provides assurance to management that the quality level of production is equal to, and generally in excess of, the standard specification.

Take us, for example. We manufacture cast iron pressure pipe in accordance with quality control specifications that are more comprehensive and exacting than the accepted technical specifications or customer's specifications under which pipe is purchased.

The first step in Quality Control is that of establishing company standards for both process methods and the physical and chemical properties of the product.

The next, backing-up step is establishing inspection procedures using statistical sampling techniques. These procedures extend from raw materials to finished product.

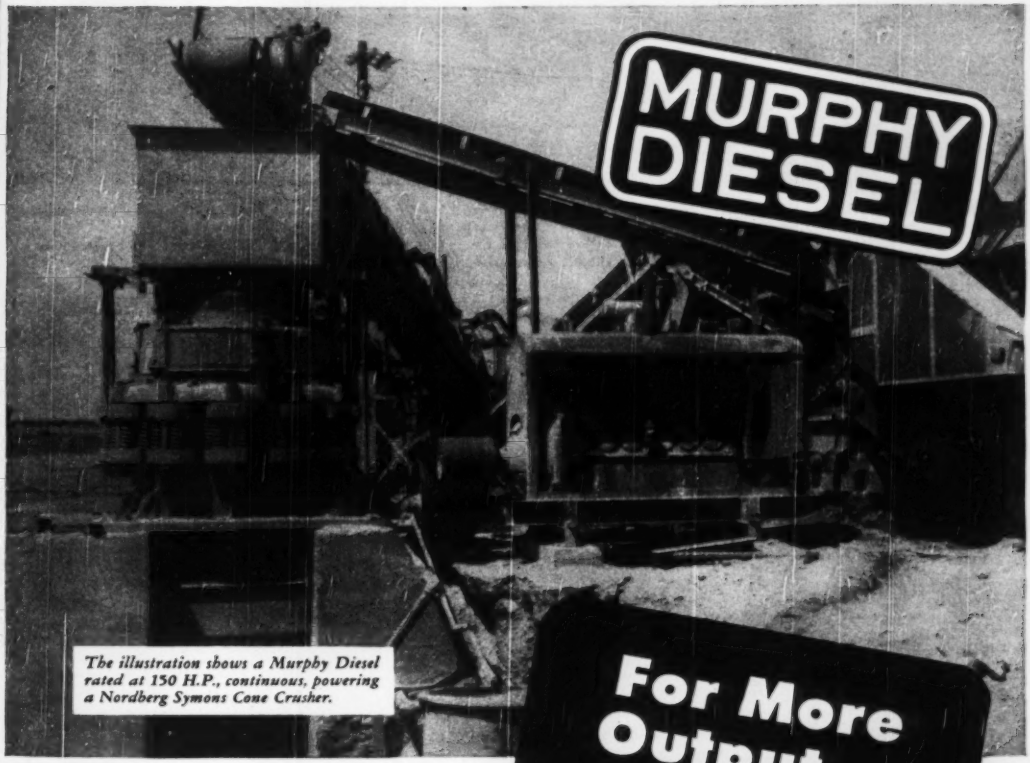
The final step is to have our Quality Control Dept. establish a group of facts in statistical form and analyze them for the purpose of removing quality standards from the realm of *opinion* into that of *organized facts.*

Production testing laboratories in our various plants are the tools for evaluating these quality standards.

U.S. Cast Iron PIPE

U.S. PIPE & FOUNDRY CO., GENERAL OFFICES, BURLINGTON, N. J.

America's largest producer of cast iron pressure pipe



The illustration shows a Murphy Diesel rated at 150 H.P., continuous, powering a Nordberg Symons Cone Crusher.

For More Output... At Lower Cost

ANY crushing job will be more profitable when you have economical, dependable power. And that's just what has made Murphy Diesels so popular with crushing plant owners everywhere. The Murphy Diesel is a rugged, heavy duty power plant built to deliver its full rated power 24 hours a day, day-in and day-out. It's economical, too — *the Murphy Diesel uses less fuel per horsepower hour than any other engine in its size range.*

Such engineering features as "true" diesel operation, unit fuel injection, four valves per cylinder, hydraulic servo-type governor and many others are the reasons why Murphy Diesels are able to compile such impressive records. Of particular interest to crushing plant operators are the Murphy features that guard the engine against the destructive effects of dust and dirt — large oil bath air filter, positive filtered crankcase ventilation and full flow absorbent type fuel and lube oil filters... extra protection for you under rock crushing conditions.

Get full information on Murphy Diesel. Ask your Murphy Diesel Dealer or write directly.

MURPHY DIESEL COMPANY
5311 W. Burnham St., Milwaukee 14, Wisconsin

Heavy duty power
for construction

Murphy Diesel Engines and Power Units for construction, 90 to 220 H.P. Generator Sets, 60 to 133 K.W.

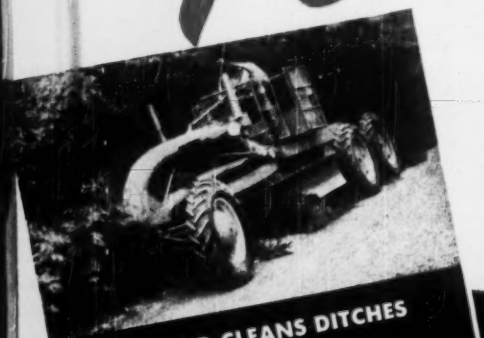
LOW in Cost... BIG in Performance

NEW ALLIS-CHALMERS MODEL D

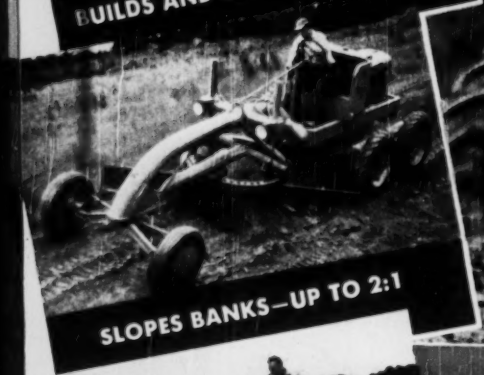
WEIGHT — 8,500 lbs.

BRAKE HP. — 34.7 (famous Allis-Chalmers gasoline engine)

SPEEDS — four forward, 2.40 to 18.61 m.p.h.; reverse to 2.37



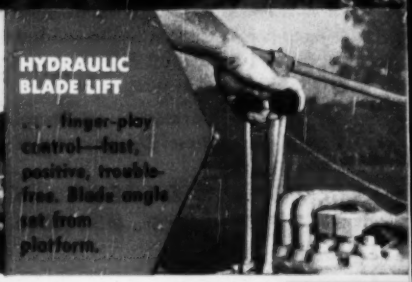
BUILDS AND CLEANS DITCHES



SLOPES BANKS—UP TO 2:1

LEVELS SUB-GRADE; ideal for finishing

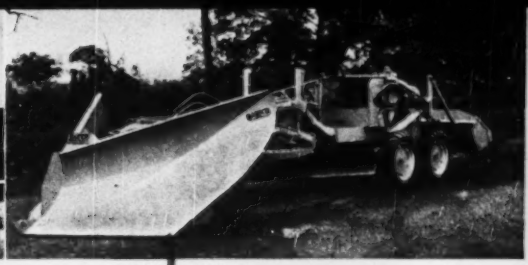
ALL-VIEW CAB lifted off or replaced in a jiffy.



HYDRAULIC BLADE LIFT . . . finger-play control—fast, positive, trouble-free. Blade angle set from platform.

HYDRAULIC SCARIFIER—does a surprising job ...rear-end weight keeps teeth ripping uniformly, at desired depth—smooth, positive steering.

LOADS MATERIAL into trucks with Tractomotive Loader—from windrows and stockpiles...surplus dirt or snow.



PLOWS SNOW with specially designed Baker snowplow (backfills with interchangeable blade).

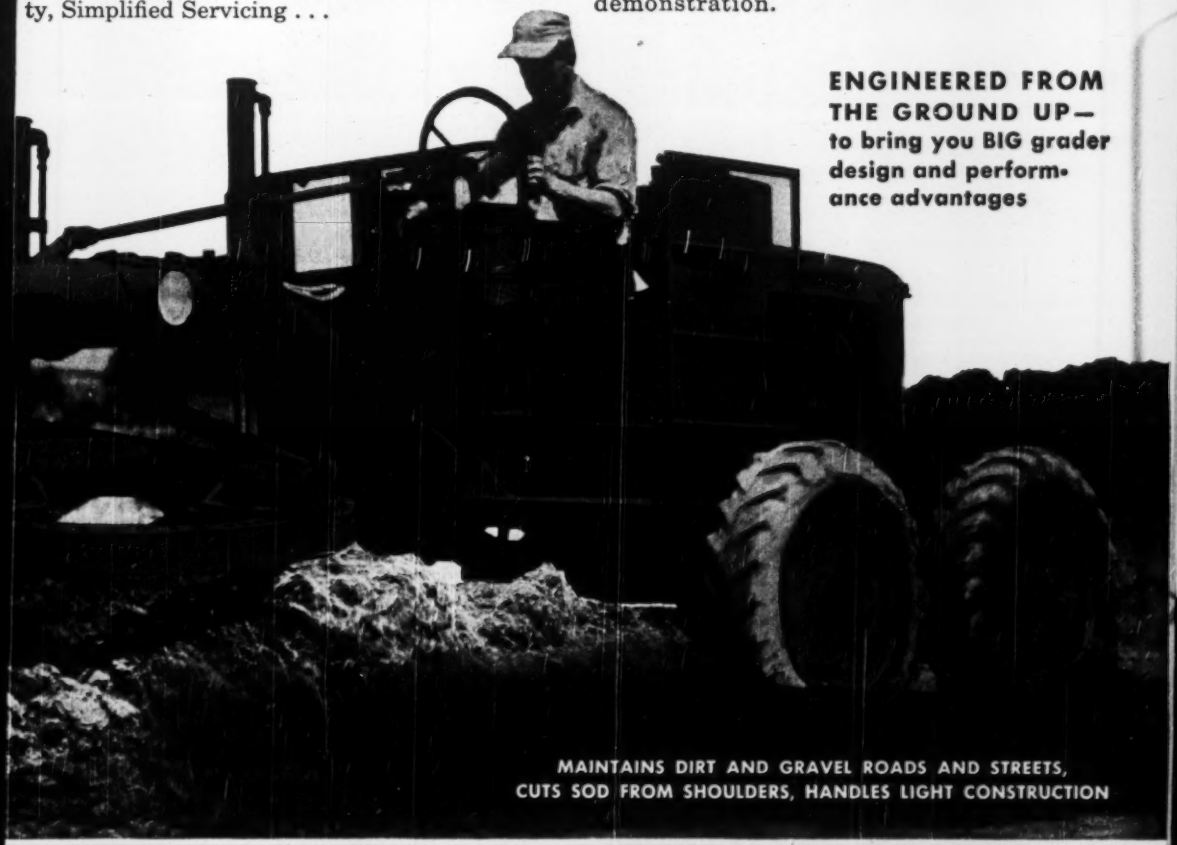
One-third the price of large motor graders

Yet has many big grader features — Tandem Drive, "Roll-Away" Moldboard, Tubular Frame, Hydraulic Blade Lift, Engine Over Drive Wheels, Drop Down Transmission, High Throat Clearance, Complete Operator Comfort, Full Visibility, Simplified Servicing . . .

. . . Plus special attachments that widen its usefulness—Rear-End Loader, Scarifier, V-Type Snowplow with interchangeable blade for backfilling and light 'dozer work. Also various other accessories.

Ask your Allis-Chalmers dealer for a demonstration.

ENGINEERED FROM THE GROUND UP— to bring you BIG grader design and performance advantages

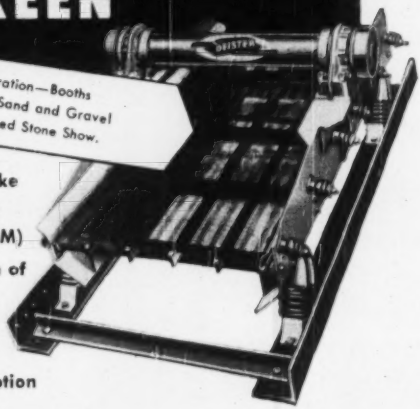


MAINTAINS DIRT AND GRAVEL ROADS AND STREETS, CUTS SOD FROM SHOULDERS, HANDLES LIGHT CONSTRUCTION

ALLIS-CHALMERS

TRACTOR DIVISION • MILWAUKEE 1, U. S. A.

DEISTER
Announces New Non-Blinding
AG-LIME
SCREEN



In Operation—Booths 35 & 36—Sand and Gravel and Crushed Stone Show.

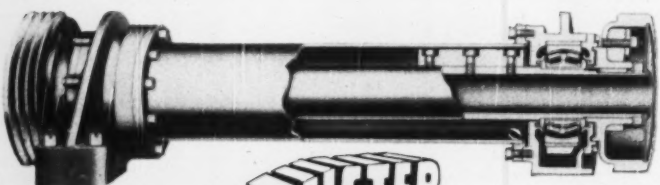
- Much Longer Stroke
- Far Higher Speed (approx. 2000 RPM)
- Graduated Length of Stroke
- Aerodynamic Construction
- Unitized Head-Motion

This new Deister Screen is designed *especially* for the faster, better handling of ag-limestone and other damp, sticky, fines.

An extremely rapid stroke-cycle has been developed by removing unnecessary dead weight. Light but strong materials and aircraft construction principles are used in both head-motion and supporting members.

The *new* Unitized Head-Motion is precision-built and jig-assembled . . . is demountable as a unit and interchangeable so that there is never any need for downtime when screens are operated in batteries.

You'll want all the facts on this new Deister Screen for faster, more profitable handling of damp, sticky materials. Write for Bulletin No. 51 today.



This cut-away shows the new Unitized Head-Motion of the Deister Ag-Lime Screen.

DEISTER SCREENS

DEISTER MACHINE COMPANY
FORT WAYNE 4, INDIANA

NEWS BRIEFS

Unlike a Woman—Political subdivisions which undertake condemnation proceedings can't change their minds once action has been started. At least, they can't in Pennsylvania. The state supreme court rebuffed Philadelphia in a case arising from the city's decision to condemn a tract for a playground. After the owners had moved, the city changed its mind and attempted to turn back the properties, but the court said no.

Which Gasoline D'Ya Use?—Esso-Standard Oil Co. of Pennsylvania has held exclusive concession to sell gasoline on the Pennsylvania Turnpike since it was opened, but motorists who use the eastern and western extensions will have to switch to that good Gulf gasoline. Gulf won the concessions on each extension. The Turnpike Commission will collect 2.76 cents on each gallon of gas delivered to stations on the eastern extension; 15 cents for each gallon of motor oil sold; seven percent of the gross restaurant receipts and 15 percent of the gross on other sales.

More Dam Controversy—Wisconsin's attorney general has ruled unconstitutional a law empowering county officials to overrule state conservation department findings on the usefulness of dams. Wisconsin Hydro-Electric Co. had asked the state Public Service Commission for the right to build a small power dam on the Namakagon River at Spooner, Wis. The conservation department objected, asserting the stream's scenic values outweighed its power potential. The Washburn County board voted unanimously, though, in favor of the power dam. The attorney general's opinion frees the PSC to consider the conservation department's ruling.

Unhappy Precedent—Phoenix, Ariz., City Council recently awarded a contractor $24,895 over his low bid when he claimed he lost money on a job. Now just look at the problems it has! Within a week, one contractor on a multi-phase job claimed $10,098 and there were indications that other claims would arise from the job. Another was preparing a $100,000 claim. The lucky contractor said the job required more labor and materials, due to soil conditions, than the specifications indicated.

They Mean Business—Pennsylvania's Sanitary Water Board has ordered

(*Continued on page 10*)

Helps win the race for dollar savings

Preformed "Blue Center" Wire Rope . . . smoother operation — longer life

TWO THINGS reduce wire rope costs . . . *longer service life . . . smoother performance on the job.* You get both with Roebling Preformed "Blue Center" Steel Wire Rope, and for special reasons. One reason is that "Blue Center" Steel was developed to give wire rope *extra* measures of strength and durability . . . and only Roebling makes "Blue Center" Steel. Another reason is the Roebling Preformed construction with its unsurpassed merits, both in handling and in operation. A third reason is the Roebling "know-how" in the manufacture of wire rope.

PREFORMED IS FASTER, SMOOTHER. Roebling Preformed wire rope is not inclined to set or kink; you can cut it without seizings; apply fittings readily . . . and this adds up to easier handling and installation. In operation, Preformed wire rope reduces vibration and whipping; hugs small drums; winds uniformly and smoothly; gives longest service life despite the severe flexing caused by small sheaves and reverse bends.

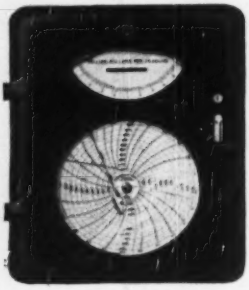
FREE ENGINEERING SERVICE. Have your Roebling distributor help you choose the *right* wire rope for long, low-cost service. If you have any special problems in the installation or maintenance of wire rope, your distributor will call for the assistance of a Roebling engineer. John A. Roebling's Sons Company, Trenton 2, New Jersey.

WRITE OR CALL THE ROEBLING FIELD MAN AT YOUR NEAREST ROEBLING OFFICE AND WAREHOUSE

Atlanta, 934 Avon Ave. ★ ***Boston,*** 51 Sleeper St. ★ ***Chicago,*** 5525 W. Roosevelt Rd. ★ ***Cleveland,*** 701 St. Clair Ave., N. E. ★ ***Denver,*** 1635 17th St. ★ ***Houston,*** 6216 Navigation Blvd. ★ ***Los Angeles,*** 216 S. Alameda St. ★ ***New York,*** 19 Rector St. ★ ***Philadelphia,*** 12 S. 12th St. ★ ***Pittsburgh,*** 855 W. North Ave. ★ ***Portland, Ore.,*** 1032 N. W. 14th Ave. ★ ***San Francisco,*** 1740 17th St. ★ ***Seattle,*** 900 First Ave.

Simplex narrows the gap of error

With New TYPE "H" METER



An extremely accurate meter which measures flows within ± 2% over a 13 to 1 range!

We feel that a discerning engineer requires accuracy above all else in any instrument he purchases. Within its flow range the new Type "H" Meter registers measurements that are more accurate than usually encountered in commercial instrumentation and it truly "narrows the gap of error".

Type "H" Meter is specially designed for:

- Use with Venturi Tube, Flow Nozzle, or Orifice Plate.
- Measurement of hot or cold water, steam, process liquors, gases, trade wastes, sewage or sludge.
- Wall bracket, instrument panel, or floor mounting . . . outdoor or indoor as desired.
- Inclusion of three vital measuring elements—indicator, recorder, totalizer.
- Testing in place at any time with an easily applied manometer test device.
- Maximum differentials of 114" or 64" of water as desired.
- Easy flow reading, utilizing evenly spaced chart and dial graduations.

IT'S ACCURATE IT'S SIMPLEX

Write for Free Bulletin No. 400 to the Simplex Valve & Meter Co., Dept. 1, 6751 Upland St., Philadelphia 42, Pa.

SIMPLEX

VALVE AND METER COMPANY

(*Continued from page 8*)

more than 1,200 industries and municipalities to draw plans for waste treatment works. It's part of a program to eliminate the effects of 100 years of pollution.

Big Muddy Study—Kansas, Missouri, Nebraska, Iowa and South Dakota will start a survey of pollution in the lower Missouri River this month. U. S. Public Health Service will help.

Consultant Wanted—Ohio's Turnpike Commission will confer this week with five candidates for the consulting assignment on the Ohio Turnpike. Highway Director T. J. Kauer says there are only five consultants known to be qualified for the job. Meanwhile, the commission has before it a plea that consideration be given adequate spurs from the turnpike to Cleveland and Toledo. It comes from the Ohio Contract Carriers Asso., which says more than half the traffic on the Pennsylvania Turnpike is made up of commercial trucks.

THE COVER

If your 1950 reading budget includes any magazines with a shapely young (female) trapeze artist on the cover, you'll get some idea of the difficulty of publishing ENGINEERING NEWS-RECORD.

Not long ago, ENR asked Ernest E. Howard for an informal picture, to be taken by a portrait photographer, for use as a cover picture when Howard took over as president of the American Society of Civil Engineers. This request, unfortunately, coincided perfectly with Kansas City's Christmas shopping rush—it appeared that everyone in Kansas City was determined to give a photo as a gift.

Most unusual excuse came to Howard from the photographer he most wanted. Seems his studio was occupied by: (1) a trapeze; (2) that shapely young model, complete with costumes; and (3) a large rush order for 52 acceptable cover pictures of her on the trapeze. It wound up with Howard taking his office to another studio for the ENR cover shot on this issue but ENR added the background in New York.

When not standing in line for photographs, Howard is the senior partner in the Kansas City and New York consulting firm of Howard, Needles, Tammen & Bergendoff. A native of Canada, he got his engineering training deep in the heart of you-know-where, at the University of Texas, B.Sc. and C. E. in 1900. Specializing in the engineering of bridges and deep foundations, he has worked on structures in 40 states and several foreign countries. For further details, see pages 29 and 36 of this issue.

PROOF - *not Guesswork*

Makes FWD America's Foremost Heavy-Duty Truck

Here's actual operating proof in typical highway maintenance service. This FWD Maintainer is doing a regular job — lifting itself up and over obstacles while constructing roads. Rough going such as this demands climbing ability only four driving wheels provide. What's more, with FWD, you can be sure of this even before you buy. And here's why. FWD Maintainers are scientifically tested on the proving ground to climb up and over an 8-inch beam from a standstill. *No wonder FWD Trucks are the No. 1 choice of states, counties and municipalities—with individual fleets of over 300 units.*

WHAT FWDs DO ON THE PROVING GROUND
1 Highball over hilly curved roads!
2 Slog thru mud — up to the bumper!
3 Speed over 100-ft. unbanked circle!
4 Twist over ditches —18 inches deep!
5 Drive up 6% grade thru 3-ft. of sand!
6 Climb 70% grade from dead stop!
7 Climb 8-in. beam from standstill!
8 Drill pole holes to prove equipment!
9 Speed safely over level highways!
1
2
3
5
6
7
8
9

This is FWD's proving ground. This is your assurance that the FWD you select has the stamina to insure long life without expensive mechanical breakdowns.

An FWD pulls itself over an 8-inch beam at the proving ground. For all the facts about FWD trucks, see your FWD distributor — or write direct.

An Invitation To Truck Buyers

We invite you to watch FWDs pass a series of rigid performance tests. Ask your FWD distributor to arrange your visit to our plant. Or — if you can't get away, ask him to show you the movie, *The FWD Story*. In either case, you will see for yourself how FWD trucks can help solve your heavy-duty trucking problems.

President
The Four Wheel Drive Auto Company

H-4

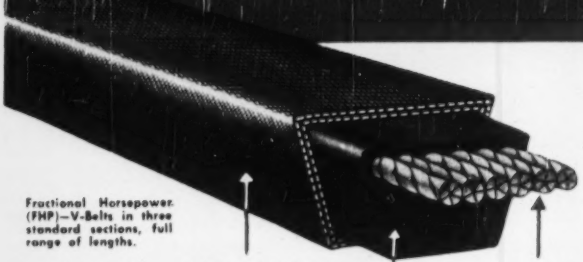
THE FOUR WHEEL DRIVE AUTO COMPANY
Clintonville, Wis. • *Canadian Factory:* Kitchener, Ontario
FOUR AND SIX WHEEL DRIVE TRUCKS

America's Foremost Heavy-Duty Truck

BWH

DEPENDABLE RUGGEDNESS

BULL DOG V-BELTS demonstrate how to get the most out of V-Belts

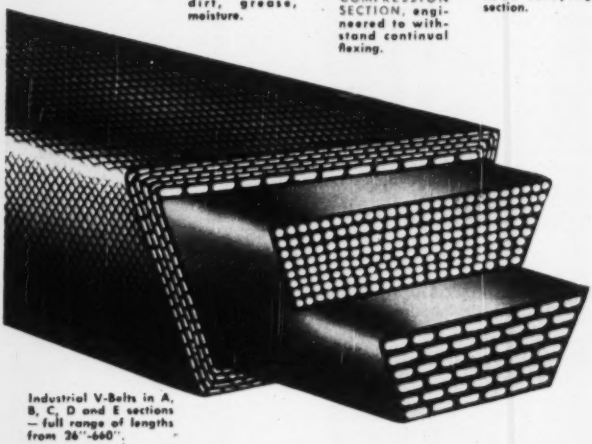


Fractional Horsepower (FHP)—V-Belts in three standard sections, full range of lengths.

WEAR-RESISTANT COVER, protects heart of belt from dirt, grease, moisture.

COMPRESSION SECTION, engineered to withstand continual flexing.

BULL DOG CORDS, powerful load-carrying section.



Industrial V-Belts in A, B, C, D and E sections — full range of lengths from 26"-660".

OUTSTANDING ADVANTAGES OF BULL DOG V-BELTS

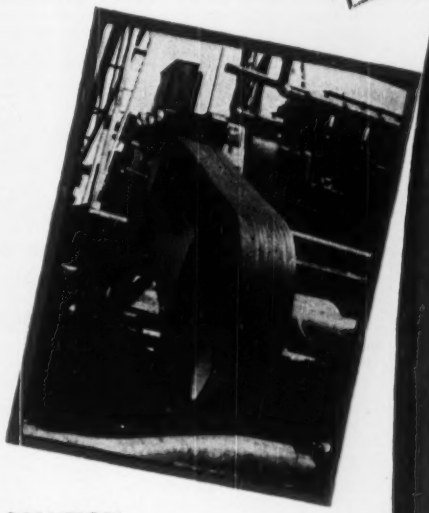
1. Fewer Maintenance Headaches. Because BULL DOG V-BELTS require less adjusting and last longer, they save time, money and worry in maintenance.

2. Longer Belt Life. Because new, quality-controlled compounds developed in BWH laboratories run cool, don't crack or deteriorate under severe flexing.

3. Backed by BWH Reputation for Extra Service. In the 72 years that BWH has been a leader in the mechanical rubber manufacturing field, BWH products have built steady fame for outstanding performance. BULL-DOG V-BELTS fully live up to BWH reputation for dependable ruggedness.

Efficient V-Belt operation insures steady, smooth, low-cost power transmission, without maintenance worries, over long periods of time. And that's exactly the kind of economical, worry-free service BULL DOG V-BELTS deliver in all types of industry.

Each job has its own problems, however. Here are some of the common ones that engineers report in V-Belt operation, with BWH solutions:



PROBLEM	SOLUTION
Excessive Cover Wear on V-Belts	Check sheaves for worn grooves. Check alignment between sheaves. Check to see that sheaves are tight on shafts.
Covers Loosen . . Rubber Gets Soft and Sticky	Check for excessive oily conditions. If contact with oil or grease cannot be prevented, then specify BULL DOG HSO V-BELTS, which are oil resistant. (Also heat resistant and static conducting.)
V-Belts Failing Within Few Hours of Installation	This is usually caused by prying V-Belts over edge of sheaves, causing internal cords to break. Correct method of installation is to move motor of driven machine until belts do not have to be forced onto sheaves. Then move motor back until sufficient tension is applied.
New V-Belt Installed As Replacement Fails, While Old Belts Continue Running	Never install a new belt in a set of old belts, because it will be either shorter or longer than the old belts. If shorter, it will be excessively overloaded and fail. If longer, it will not transmit an equal share of the load. Always install a complete new set of belts and retain old belts for an emergency, or for temporary replacement if needed.

It will pay you to investigate BULL DOG V-BELTS on your next installation. They have what it takes for smoother operation on both FHP motors and on high-powered industrial jobs.

HAVE YOU A JOB WHERE STAMINA COUNTS?

Bring us your toughest problems. We're specialists in solving them. Consult your nearest BWH distributor or write us direct.

BWH
DEPENDABLE RUGGEDNESS

FOR ALL MECHANICAL RUBBER GOODS CONSULT BWH

Established in 1878, BWH is today one of the world's largest manufacturers of mechanical rubber goods. Among the quality-famous BWH products which are today helping industry to do better jobs at lower cost are the following:

CONVEYOR BELTING
ELEVATOR BELTING
TRANSMISSION BELTING
AIR HOSE
CONTRACTORS' HOSE
FIRE HOSE
OIL INDUSTRY HOSE
STEAM HOSE
WATER HOSE
OIL FIELD SUPPLIES
FRICTION TAPE
SPLICING COMPOUND

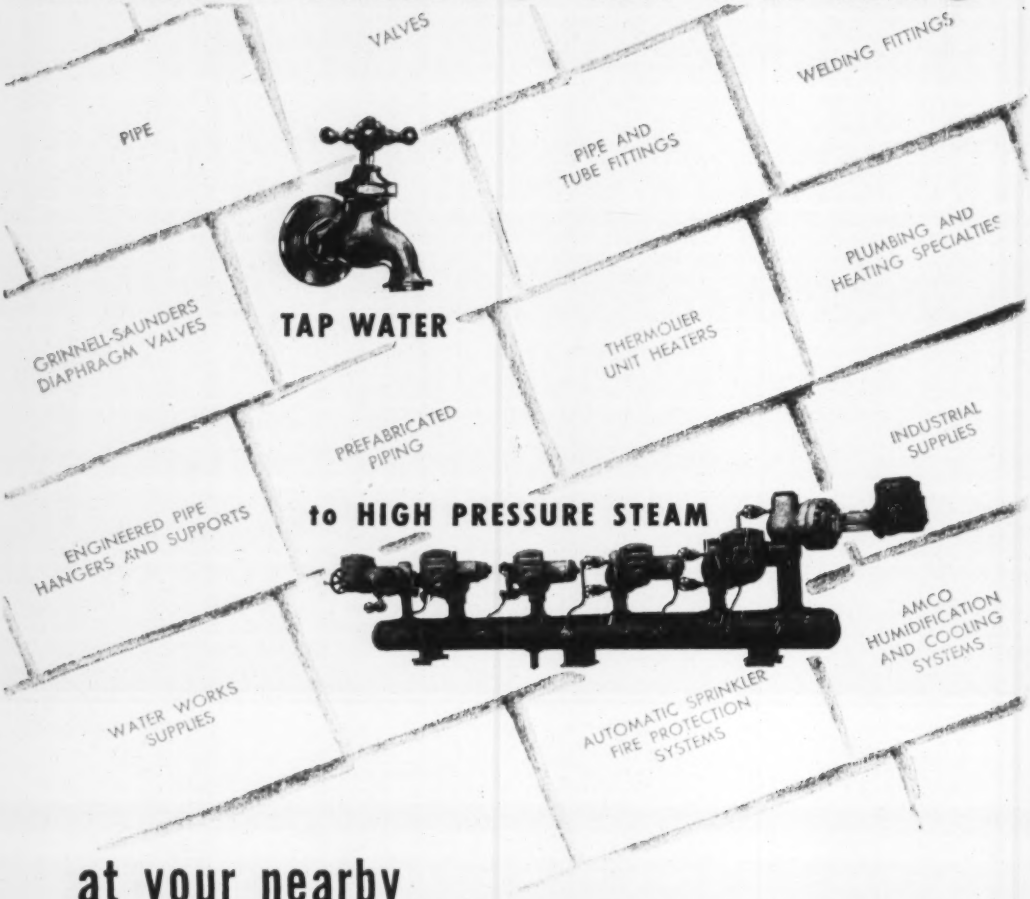
Another Quality Product of

BOSTON WOVEN HOSE & RUBBER COMPANY

Distributors in all Principal Cities

PLANT: CAMBRIDGE, MASS., U.S.A. • P.O. BOX 1071, BOSTON 3, MASS., U.S.A.

EVERYTHING for PIPING



at your nearby GRINNELL WAREHOUSE or JOBBER

More than 1000 Grinnell warehouses and jobbers . . . one within easy reach of your phone . . . are ready to give you prompt delivery on any standard piping product. When the job calls for specialized piping products or installations, Grinnell has the manufacturing facilities, products, experience and engineering knowledge to "deliver the goods."

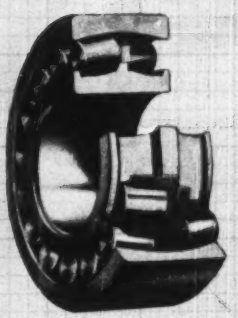
100th ANNIVERSARY — PIPING

GRINNELL

Grinnell Company, Inc., Providence 1, R. I. Warehouses: Atlanta • Buffalo • Charlotte • Chicago • Cleveland • Cranston • Fresno • Kansas City • Houston • Long Beach Los Angeles • Milwaukee • Minneapolis • New York • Oakland • Philadelphia • Pocatello • Sacramento • St. Louis • St. Paul • San Francisco • Seattle • Spokane

More Power to Lima-Hamilton Power Shovels

...through TORRINGTON SPHERICAL ROLLER BEARINGS



On the power take-off shaft of its shovels, Lima-Hamilton Corporation uses Torrington Spherical Roller Bearings to transmit power smoothly with minimum friction loss and wear.

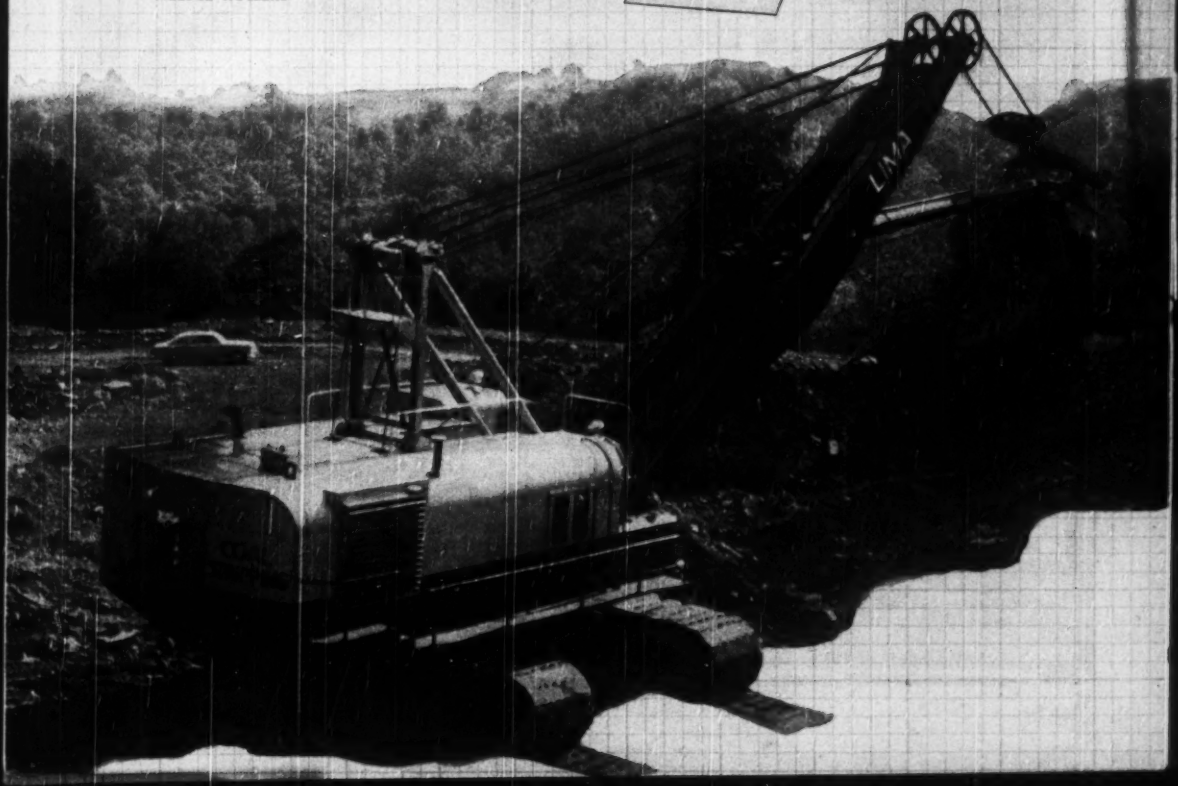
Under shock loads, barrel-shaped rollers align themselves freely in the spherical outer race . . . can't bind or drag. Even load distribution is secured without alignment adjustments, and maintained under deflection.

Maximum life expectancy results from this combination of self-alignment with tremendous load capacity in Torrington Spherical Roller Bearings. Secure these advantages in your heavy-duty equipment—our engineers will be glad to help.

THE TORRINGTON COMPANY
South Bend 21, Ind. • Torrington, Conn.
District Offices and Distributors in Principal Cities of United States and Canada

SPHERICAL ROLLER
TAPERED ROLLER
STRAIGHT ROLLER
NEEDLE
BALL
NEEDLE ROLLERS

TORRINGTON *SPHERICAL ROLLER* **BEARINGS**



Plenty of Power...

IN McCULLOCH 3-25

HORSEPOWER POUNDS

AMAZED! That's the only way to describe the way woodsmen feel when they first try out a McCulloch 3-25. They're amazed to find that a saw so light can cut so fast.

Here are some reasons

Horsepower, *plus* engine torque characteristics, internal friction conditions, and chain efficiency actually determine how fast a chain saw will cut. The McCulloch 3-25 has a 3-horsepower special McCulloch engine designed to match exactly the requirements of chain sawing. All bearings are anti-friction. And McCulloch chains are designed for maximum cutting efficiency in all types of wood.

OTHER FEATURES, TOO ★ Automatic clutch ★ Manually operated built-in chain oiler ★ Full-power sawing in any position or at any angle ★ Kickproof rewind starter ★ Easily accessible ignition breaker points ★ Conveniently grouped engine controls ★ Weight of less than 25 lbs. complete with 18" blade and chain.

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THERE'S A McCULLOCH FOR EVERY LOGGING JOB

20" Model 5-49 . . . $385

50" Model 5-49 . . . $415

18" Model 3-25 . . . $295

30" Model 5-49 . . . $395

60" Model 5-49 . . . $425

24" Model 3-25 . . . $305

40" Model 5-49 . . . $405

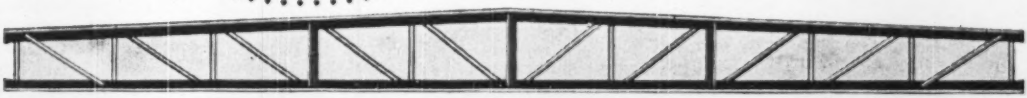
20" 5-49 Bow Saw...$425

15" 3-25 Bow Saw...$325

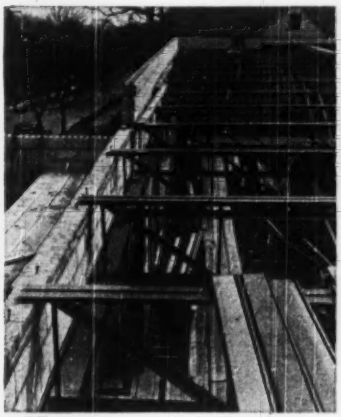
All prices f. o. b. Los Angeles

NATIONWIDE SALES AND SERVICE

TRUSCON Clerespan Joists ... great *strength* ...

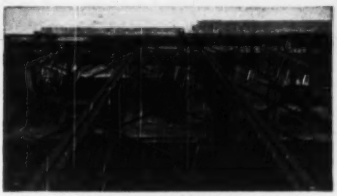


One of the several types of "Clerespan" Joists available



"Clerespan" exceptional width of chord members greatly facilitates roof construction.

Typical "Clerespan" obstruction-free installation



"Clerespan" Joists permit longer spans per given joist depth in roof construction.

Truscon "Ferrobord" Steeldeck with "Clerespan" Joists produce ideal fire-resistant roof.

clear spans up to 80 feet

In the battle of load against length, Truscon "Clerespan" Joists have achieved longer, support-free spans and greater obstruction-free floor areas than ever before possible! "Clerespan" Joists possess great lateral stiffness, due to the high radius of gyration about the vertical axis. The distinctive "Clerespan" design; structural steel shapes; the inbuilt camber; the integrally-welded joints—all these permit roof and floor construction of unusual efficiency and economy. "Clerespan" Joists are available in underslung design with top chord parallel to bottom; or with square ends; or pitched in one or two directions. Write for free illustrated literature giving complete details.

FREE Book on Truscon "Clerespan" Joists. Write for it. The Truscon Steel Company Manufactures a Complete Line of Steel Windows and Mechanical Operators . . . Steel Joists . . . Metal Lath . . . Steeldeck Roofs . . . Reinforcing Steel . . . Industrial and Hangar Steel Doors . . . Bank Vault Reinforcing . . . Radio Towers . . . Bridge Floors.

TRUSCON STEEL COMPANY
Subsidiary of Republic Steel Corporation
YOUNGSTOWN 1, OHIO
Warehouses and sales offices in principal cities

SPOKANE..

The Same Kind of Reliable Allis-Chalmers Equipment Serving Spokane Is Available to Any Size City—Large, Medium or Small

VITAL to any city's industrial and residential growth is a *dependable source of good water.* Spokane has grown from a small village to a key city of 167,000 largely aided by an abundant supply of water drawn from wells . . . clear water with a hardness of but 8 grains per gallon, and a cool temperature of 48F.

To pump this water efficiently and economically takes dependably-designed equipment — much of it carrying the trademark, ALLIS-CHALMERS. In Spokane's waterworks you will find A-C hydraulic turbines (which supply power for pumping) and generators, switchgear, motors and centrifugal pumps.

A-C READY TO DISCUSS *YOUR* EQUIPMENT NEEDS

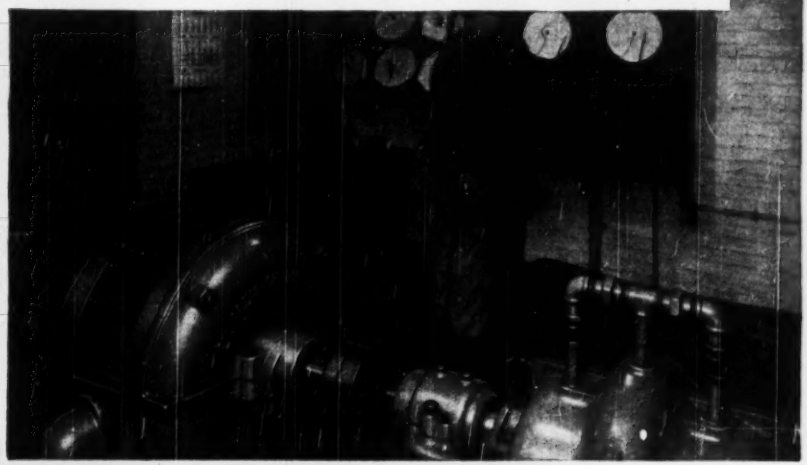
As builders of the world's widest range of correlated major public works equipment, Allis-Chalmers is in the unique position of being able to offer you a high degree of *engineering coordination* in the selection and "teaming" of equipment for municipal operation. This *simplifies* your engineering, *pins down responsibility* for performance. A qualified engineer will be glad to go into detail with you! Call your A-C Sales Office or write direct.

ALLIS-CHALMERS, 1018A SO. 70 ST.
MILWAUKEE, WIS.

Builders of the World's Widest Range of Public Works Equipment

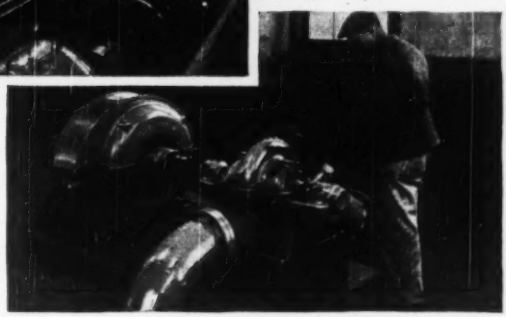
ALLIS-

A Story of Progress



GRAND STREET pumping station equipped with Allis-Chalmers pump and motor. The 10 x 8 inch pump delivers 2,780 gpm against a 200 ft head and is driven by a 200 hp motor.

RIVER STATION pumping plant has depended on four Allis-Chalmers pumps and motors since 1911. Each unit rated 8,333 gpm, heads to 260 ft. Motors rated 900 hp, 2300 volts, 900 rpm.



ALLIS-CHALMERS pump-motor "team" delivers 2,700 gpm against a head of 210 ft. The 200 hp, drip-proof motor has been in service many years. Location of this pumping station is adjacent to the Lincoln Heights reservoir, the city's largest, which has a capacity of 24 million gallons.

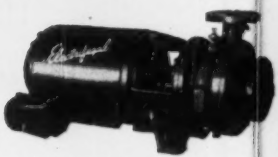
Electrifugal is an Allis-Chalmers trademark.

CHALMERS

News Notes

FOR WATERWORKS MEN

HERE'S a problem common to many cities these days: outlying residential areas expand so fast that water lines become inadequate. A city in the Southwest, for example, was serving up to 50 homes on a two-inch line and water pressures were woefully weak. Faced with heavy construction costs in replacing this line with a larger one, they decided



Electrifugal Pumps—range from 10 to 1600 gpm, heads up to 525 ft.

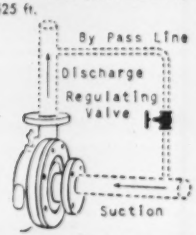


Diagram showing arrangement of by-pass line.

to try an *Electrifugal* pump as a booster. With this arrangement a by-pass line is generally attached to prevent overheating of the pump during low-consumption periods.

Electrifugal pumping units, with motor and pump on a single shaft, are ideal booster pumps for situations like this. Why not check up on what *Electrifugal* pumps can do for your city? Write today. A-2868

A-C ALLIS-CHALMERS

3 important reasons for building with CONCRETE FRAMES AND FLOORS

REINFORCED concrete frame and floor construction offers three important advantages to architects, engineers, contractors, owners of privately financed buildings or taxpayers who pay for public buildings:

1. It reduces construction costs substantially. Concrete construction can lower frame and floor costs 25% to 40% under other types of construction.

2. It saves construction time. Since frame and floor construction proceed simultaneously, masons, plumbers, electricians and other tradesmen can do their work as the structural job progresses.

3. It allows great latitude in design. Partitions can be located where they are most desirable and columns can be placed wherever convenient to leave maximum usable space. Regardless of structural requirements there is a type of concrete frame and floor construction for every job. Such construction is ideally adapted to apartments, hospitals, schools, hotels, industrial plants and office buildings.

A typical example of concrete frame and floor construction is Fordham Hill Houses illustrated above. This project, owned by the Equitable Life Assurance Society of the United States, consists of six 16-story, two 15-story and one 14-story building.

This 1,118 apartment development in New York City required more than 40,000 cu.yd. of concrete in the frames and floors—enough to build an average 24-ft. highway about 13 miles long. Leonard Schultze and Associates, architects; J. DiStasio & Co., structural engineers; Starrett Bros. & Eken, contractors, all of New York City.

Our technical staff will gladly help architects and engineers attain the highest quality concrete and the maximum structural advantages of reinforced concrete construction for any building project.

Write for two free booklets, "*Continuity in Concrete Building Frames*" and "*Handbook of Frame Constants.*" Distributed only in the U.S. and Canada.

PORTLAND CEMENT ASSOCIATION

DEPT. 1c-17, 33 WEST GRAND AVENUE, CHICAGO 10, ILLINOIS

A national organization to improve and extend the uses of portland cement and concrete through scientific research and engineering field work

THE CONSTRUCTION WEEK

CONCERNING HOUSING—That bill to spur middle-income housing, introduced in both the House and Senate in the first week's rush of business (ENR Jan. 12, p. 17) won't have much effect on construction this year or next. Washington thinks the idea of forming a government-private corporation that would finance mortgages a good one. But it feels that a lot of education must go on before the public is convinced of the value of cooperative housing ventures. Quickest support for co-op ventures should come from labor unions, veterans' groups and welfare organizations—but even these will find it a hard task to establish the necessary community of interest—and to hold it together—during the long period required for preparing and building such a project.

PORT AUTHORITY UNDER FIRE—The Port of New York Authority apparently is going to spend some unhappy moments this winter as New York and New Jersey state legislators promote probes into the authority's contract-award procedure. Apparently an outgrowth of the recent award of a contract for PNYA's huge Manhattan bus terminal to the second-low bidder (ENR Jan. 12, p. 26 and Dec. 22, 1949, p. 23) three separate proposals have been introduced into the New York state legislature proposing probes into the agency's operations. All three proposals (two from Democrats and one from Republicans—who control the legislature) attacked PNYA for "abusing" its independent status, for its contract-awarding procedures, for the alleged high salaries paid its officials, for the toll-structure of the various bridges and tunnels it operates, for its handling of airline contracts at the four airports it now controls. Similar proposals for probes are planned in the New Jersey legislature, which convened last week.

NO RAINMAKING—New York City water supply officials want rain in the worst way, but if upstate watersheds are to be inundated, they are content to let it be an act of God. They have had one serious rainmaking proposal (ENR Dec. 22, p. 17) plus many not so serious. But, legal unknowns keep them from trying any cloud seeding. They fear the terrible storm of lawsuits that might blow in from the northwest if man-made showers were to damage watershed properties.

HUNGRY CONTRACTORS—Pennsylvania contractors are hungry for highway construction in that state's 1950 roadbuilding program. Proof: 216 bids were submitted on 24 road and bridge projects at three State Highway Department lettings last month. This is an average of 9 bids per project. The 24 projects included 21 bridges and 58 mi. of new pavement and pavement widening. Just to keep the ball rolling, the department led off this year with two lettings during the first two weeks of January involving 12 projects containing 30 mi. of road construction and 16 bridges.

FEDERAL INVESTMENT BUDGET—President Truman took another step toward that "double budget" (ENR Nov. 17, 1949, p. 17) for federal expenditures last week. His budget, he told Congress, provides that 20 cents of every dollar the U. S. will spend in fiscal 1951 will be for "investments." Truman figures that $8.7 billion of the $42.4 billion budget will be loaned or spent for physical assets. Loans will account for almost one-fourth of this figure (exclusive of ECA funds) and the U. S. thinks it can recover all of that amount. The remainder—about $6.8 billion—will be spent for acquisition, improvement or construction of physical assets, and the U. S. figures to recoup about a third of that cost. Such a low recovery rate takes some shine off the term "investment."

PRIVATE ENTERPRISE OPPORTUNITY—As a part of its push to make the town of Oak Ridge, Tenn., as nearly self-sustaining as it can, the Atomic Energy Commission is asking private utility companies to bid for construction and operation of a natural gas utility for the town. AEC last week sent out preliminary letters to a group of utility companies and others, announcing it would take bids soon for the project. AEC has already completed construction of a high-pressure natural gas line to supply fuel for its plants, now wants to make the fuel available to the town's 30,000 residents, and current and future commercial and industrial users. "Every effort," says AEC's letters, "is being made to encourage private enterprise, and we are looking forward to possible eventual incorporation of the town and the sale of houses and commercial buildings to private owners."

AEC CONTRACTS? HERE'S HOW—Contractors, engineers and architects who want Atomic Energy Commission work—and apparently many of them do—have a date with the Superintendent of Documents, Washington, 25, D. C. For 10 cents, they can get a 14-page pamphlet entitled "A Guide for Contracting of Construction and Related Engineering Services." The document describes what kind of contracts AEC uses and how bidders can qualify for contracts which are too hush-hush even to be advertised.

EXTRA VALUE! AT NO EXTRA COST!

HI-BOND has *HIGHER* deformations than required by ASTM Specification A305

THE new Specification A305 of the American Society for Testing Materials gives architects and engineers a standard by which they are guaranteed a deformed reinforcing bar that will carry its share of the load in the structure. By specifying that reinforcing bars meet ASTM A305, they are assured of receiving bars with deformations having minimum heights, maximum spacing, and other characteristics which promote improved bond.

Inland HI-BOND bars not only meet but *beat* ASTM A305, for they have higher deformations and more closely spaced ribs than the specification requires. You get this plus value at no extra cost in *every* HI-BOND bar . . . for mill practice requires that test samples of HI-BOND be taken from production frequently and regularly. If, in this testing, it is found that the height of HI-BOND's reversed double-helical ribs has fallen below certain standards—standards well above the requirements of ASTM A305—the worn rolls are immediately replaced with new, deeply grooved rolls.

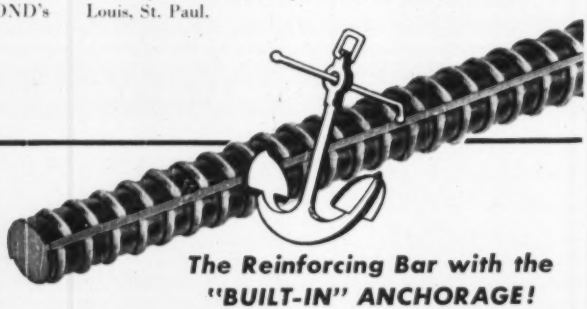
You obtain better interaction between concrete and steel when you specify ASTM A305 and you get plus value if you specify HI-BOND bars. By providing superior bonding strength—by anchoring *firmly* in the concrete—Inland HI-BOND bars prevent slipping, eliminate unsightly wide cracks, and permit more efficient and economical structures. Write for complete information.

Inland Steel Company, 38 S. Dearborn Street, Chicago, Illinois. Sales Offices: Chicago, Davenport, Detroit, Indianapolis, Kansas City, Milwaukee, New York, St. Louis, St. Paul.

INLAND

HI-BOND

Reg. U. S. Pat. Off.



The Reinforcing Bar with the "BUILT-IN" ANCHORAGE!

OTHER PRODUCTS: BARS • STRUCTURALS • PLATES • SHEETS • STRIP • TIN PLATE • FLOOR PLATE • PILING • RAILS • TRACK ACCESSORIES • PIG IRON

CONSTRUCTION TRENDS

HIGHER U. S. INCOME TAXES FAVOR STATE, CITY BONDS

Married men with incomes of	$13,000	$50,000
Paid taxes in 1924, of	7%	24%
And in 1949, paid taxes of	26%	52%
In 1924, their net returns after taxes were, from:		
US Government bonds	3.9 %	3.22%
Corporation bonds	5.23	4.27
Municipal bonds (tax free)	4.11	4.11
In 1949 their net returns after taxes were, from:		
US Government bonds	1.69%	1.10%
Corporation bonds	2.15	1.39
Municipal bonds (tax free)	2.14	2.14

(Last of a Series)

State and local governments, as earlier Construction Trends have pointed out, could theoretically increase their outstanding debt by as much as $25 billion in the years ahead. That, in turn, would make it possible for them to expand their construction programs.

But can and will investors lend them $4 billion a year or more?

This is a key question. There are masses of studies showing that non-federal public works are badly needed. And it is clear that the states and municipalities can carry a much heavier debt than they now have outstanding. But can these projects be financed?

Generally, market observers see no question but that investment markets will take a growing volume of state and municipal bonds, including the surge of public housing bonds expected next year. Their optimism is based on these broad points:

1. The federal income tax favors tax-exempt state and local bonds as investments. The interest rate on tax-exempt bonds has been lower traditionally than the rate on corporation bonds. Over the past 25 years, investors' returns on both corporation and tax-exempt bonds have declined—and by the same percentage. Yet today a married man making more than $13,000 can theoretically get a better yield from tax-exempt state and local bonds than from corporation bonds, after he pays his income tax on them. In 1924, however, when income taxes were much lower, he wouldn't have found tax-exempts attractive unless he had an income of well over $50,000 a year.

Actually, of course, the typical investor in tax-exempts has an income well above $13,000 a year, but the fact remains that above this figure, the after-tax yield on a municipal is better than on a corporate or a marketable government bond. Many corporations with some spare money to invest are in the same position. Tax-exempt bonds give them a better return than do other kinds of bonds. With federal taxes expected to stay high for years to come, the prospects for tax-exempt state and local bonds are good.

2. Other broad trends in the country's saving and investing habits favor state and local government bonds. Since the great depression, a growing share of peoples' savings has gone into savings banks, insurance, and government bonds. The stock market, in turn, has declined as a place for savings. Banks and insurance companies, of course, must invest the great bulk of their funds in bonds rather than stocks.

Pension plans, given a big push by the 1949 agreements in the steel and auto industries, are counted on to take up a growing volume of bonds, including tax-exempts. How fast they will grow cannot be predicted, but some estimates show that pension funds will soon be adding as much as a $1 billion a year to reserves.

3. The municipal bond market adjusts itself to changes in the supply of money. It does this by the automatic change in going yields on the bonds. If investors balk at taking new issues at present interest rates, the yield must ultimately adjust itself upwards. The reverse is also true: if the prospective heavy volume of bonds is still not enough to satiate investors' demands for them, the yields may actually decline.

Today, less than half of the state and local bonds not held by local authorities in their own sinking funds are owned by individuals. Commercial banks hold more than a third—35%—of the outstanding bonds. Insurance companies hold another 8% and other private organizations hold about 6%.

The money market is a big and complicated operation. It is influenced by practically every development in the economy. And it is particularly sensitive to changes in the fiscal operations of the United States Treasury and the Federal Reserve Banks. As a result, it is impossible to predict its turns or what it may do exactly. But—as the evidence adds up now—there seems to be little to limit the borrowing state and local governments may do in the next five years.

State and local governments may possibly run their total direct debt up to $30 to $35 billion. By issuing more revenue bonds for projects such as bridges, which can be supported by tolls or other charges, the total might be increased another $10 billion or more. Revenue bonds, of course, do not involve any fixed charge or tax increases for local governments.

In short, there seems to be plenty of room for financing $20-$25 billion worth of heavy construction contracts by state and local governments in the years ahead. That, will be in addition, of course, to what is financed through federal aid or from current revenues.

How fast the work will come, of course, depends in large part on the voters. In one way or another, they must approve many projects. If they are willing, state and local construction can rest at a high level.

(Parts I, II and III of this series appeared in ENR Dec. 15, p. 19, Dec. 22, p. 19, and Jan. 12, p. 19)

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A Setback for Road Plans

PRESIDENT TRUMAN put another obstacle in the way of those charged with developing an adequate road-building program when he set a limit in his budget message of $500-million on federal aid for the next two fiscal years. The current rate of federal aid is $450-million. Estimates of expenditures during the past year indicate that the state highway departments and the highway contractors have stepped up their rate of roadbuilding to the point where they can use more than that amount to advantage. They should have it if our highways are to be kept adequate for normal requirements of the nation's expanding industrial and commercial operations. Certainly they should have a much greater amount if this country is to expand its economy at the rate envisioned by the President in his earlier State-of-the-Union Message.

A Doubtful Decision

IN AWARDING one of its New York bus terminal contracts to the second-low bidder, the Port of New York Authority followed a principle that is accepted as necessary in public-works contracting practice, namely that the awarding agency be granted broad rights in selecting contractors to do its work. The exercise of these rights, however, is a privilege which means that a comparably great responsibility accompanies it. Rejecting a low bidder, as was done by the Port Authority commissioners in this case, or rejecting all bids and issuing a new call, as is more frequent, requires the most careful and painstaking consideration before a decision is made.

The Port Authority is convinced that it followed these requirements fully, and yet there is doubt in many quarters that it arrived at a wise decision. In contrast to most cases of this kind, it was confronted, in its two lowest bidders, with long-established, nationally known firms, both with records of many large and difficult jobs behind them. Rejecting the low bid was obviously impossible on the grounds of incompetence or lack of financial responsibility. The grounds chosen were two—that the low bidder had less experience on building work, and that he had done no building work in New York City. These are rather fine threads on which to hang a decision. The low bidder had successfully carried out a good many million dollars of building work, and it is everyday practice for contractors to undertake work in cities where they have not previously operated.

One need not be too concerned with the two contractors in this case. Both the winner, the Turner Construction Co., and the loser, the Merritt-Chapman & Scott Corp., have won and lost contracts before, and will again. Moreover, Merritt-Chapman & Scott's reputation is such that it can hardly be damaged by this one setback. The important consideration here is one of principle.

In effect, what the Port Authority did was to set up a qualification that was not stated in the call for bids. That appears to be fundamentally wrong. If the fact that great weight in awarding the contract would be given to building experience in New York had been stated in the call for bids, presumably Merritt-Chapman & Scott would not have gone to the expense of preparing a bid.

By their action on this contract the Port Authority and its engineering advisers have given a very serious setback to the orderly processes of doing public work by contract. Engineers have fought hard to retain some leeway in letting public contracts so that the award could be made to other than the low bidder when there was good reason to question the low bidder's ability to handle the work, or his financial resources. But the fight has been a hard one, due to recognition of the fact that once the door is opened to awarding a public contract to other than the low bidder for reasons beyond these two, it is easy for favoritism or political considerations to enter.

The Port Authority has opened that door. In so doing it has added a new hazard to an already too hazardous business. The resulting uncertainty will cause contractors who value their standing to be [illegible] to bid under like conditions in the future. Fewer contractors will go to the trouble and expense of bidding or asking subcontractors for bids.

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The retirement of Arthur D. Weston as deputy commissioner for environmental sanitation of the Massachusetts Department of Health is a case in point. Mr. Weston, who is going on "inactive duty" after 44 years of continuous public-health work, stands in the front line of the country's leading sanitation men. He has devoted his life to protecting public water supplies, to promoting pollution abatement and to encouraging basic research.

A benefited public can properly say to Mr. Weston, "Well done." We join in those sentiments and wish him well in his next self-chosen labor-of-love: Telling the story of the research done by the Lawrence Experiment Station. This is a fascinating record that's never been written; it will be awaited by public-health men with mounting interest.

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ENGINEERING NEWS-RECORD

JANUARY 19, 1950 VOL. 144 NO. 3

Denham won't amplify stand on union shop elections

Tells New York Building Trades Employers to study his statement as a whole, warns against return to closed shop in absence of votes—Hits NLRB on administration

General Counsel Robert N. Denham, of the National Labor Relations Board, has declined to amplify his ruling that union shop elections will not be required of construction.

But Denham did warn the industry not to use the absence of such elections as a cloak for maintaining the closed shop. He pointed out that the closed shop is illegal—with or without union shop elections—and admonished the industry not to "cut any corners" in its labor negotiations. His "no election" policy was announced last month (ENR Dec. 22, 1949, p. 23).

NLRB wrong, he says

These points were the highlights of Denham's speech last week (Jan. 12) before the Building Trades Employers' Association of New York City. These other points stood out:

1. For the first time publicly, Denham slapped hard at NLRB's administration of the Taft-Hartley Act.

2. By implication, he invited more extensive court testing of NLRB rulings which he opposes but which he would be required to defend on appeal.

3. Denham had high praise for the industry's joint board for settlement of jurisdiction disputes.

In declining to amplify his no-election policy, Denham asserted that he had no part in calling or preparing the Dec. 19 public hearing at which the announcement was made. He urged that his statement that day be read and construed overall, adding that:

". . . no one who reads it from its overall aspect can be deceived."

But he did answer categorically the question of whether contractors or unions must submit in detail to him a general statement of operating conditions and obtain clearance from his office certifying that union shop elections are not practicable. The answer to that question, Denham said, is "definitely no."

"The statement," Denham told an audience of about 1,000, "read as a whole from beginning to end, and with all parts of it taken together, is sufficiently clear so that any person attempting to look at it from a broad point of view will come up with a clear answer. There is just one thing about which I want to warn you: Don't try to cut corners."

Thereafter, Denham repeated his statement that closed shops, even though traditional in construction and acceptable to management and labor alike, are illegal under Taft-Hartley and must not be resorted to, with or without union shop elections. Vigorous prosecution will greet any such resort to the closed shop, he warned.

In his assault on NLRB's administration of Taft-Hartley, Denham said flatly that, after two and one-half years under the act, there is little solidly established interpretation of its ambiguous points—either by court or NLRB ruling.

He asserted that the board's membership and entire personnel were "raised in the climate of the philosophy and, I think I may say, in the religion of the Wagner Act." He indicated broadly his belief that NLRB personnel have been dragging their feet in putting Taft-Hartley to work, believing the act would be repealed.

NLRB holds courts are wrong

In some cases, Denham went on, the board has second-guessed both Denham and the courts in rulings on specific cases which reversed Denham's original contentions and court action supporting them. There has been too little review of such NLRB rulings, Denham implied, and he indicated an invitation for more court tests of such rulings.

Denham spelled out some of the pitfalls which await the construction industry, as a result of various NLRB rulings. With regard to picketing, he asserted, some drastic changes have occurred. Trucks delivering materials to a construction job may legally be picketed by a union which has a dispute with a trucking company. Pickets may block the facilities of a contractor who is erecting a plant addition, where a dispute is in progress with the owner of the plant.

Unfair lists appear to have been

Water study group to use existing data

Existing data, not new research, will form the basis for a report that President Truman's new Water Resources Commission hopes to turn in by next Dec. 1.

That much was determined last week at the commission's first meeting. Chairman Morris L. Cooke of the new agency (ENR Jan. 12, p. 29) explained that there is insufficient time for the commission to make studies of its own. He pointed out that there is voluminous data available from many sources on which the commission can base its proposals for an integrated, far-reaching U. S. water use policy.

Budget Director Frank Pace, Jr., told the commission of the importance the administration attaches to its assignment. Among the working papers distributed to the seven-member group was a speech made before the National Reclamation Association last fall (ENR Nov. 17, 1949, p. 23) by Elmer Staats, of the Budget Bureau. That speech put the Truman administration on record for a broadening of reclamation law and the development of a more comprehensive water policy.

Individuals and organizations interested in U. S. water policy will get an opportunity to "bring to the commission's attention" their views and recommendations of what should be in a new policy, Cooke said. But there's no guarantee, at present, that this will be done through hearings.

Cooke declared, also, his doubt that the commission would be called upon to recommend regarding long-range research into the use of salt water. The federal budget for fiscal 1951 includes a $500,000 item for the Reclamation Bureau with which studies on use of salt water could be made.

Cooke indicated a belief that the commission would not be in good position to recommend on water legislation pending in Congress.

legalized for union use as a result of a board reversal of itself, with little prospect of appeal. The board has found, in a trucking case, that a company may contract away its legal protection against secondary boycotts, even though it has been basic law for some time that such protection could not be contracted away. The board also has ruled that a person shall not be liable to unfair labor practice prosecution if he relies in good faith on advice of an NLRB regional director—a subordinate of the general counsel. But if he relies on the advice of the general counsel, he does so at his peril.

Denham closed his speech with a strong tribute to the joint board for settlement of jurisdictional disputes. He also complimented the New York builders and unions for their contributions, through local organizations and procedures for handling such cases, to the organization of the national joint board. That board, Denham went on, has "almost entirely relieved our agency of the problem of jurisdictional disputes in construction."

Peter W. Eller, chairman of BTEA's board of governors, reviewed the industry's year in New York City and found it good. He praised the effectiveness of a five-year wage stabilization agreement which expires this June and predicted that negotiations soon to begin on a new agreement will bring about a new one "equally satisfactory." The industry's record in New York, he said, would have been impossible without "well-established and mature labor relations."

BRAB research conference reveals funds problem

The first research conference, called together last week by the year-old Building Research Advisory Board in Washington, gave only partial promise that funds to finance BRAB's coordinating and leadership activities would be forthcoming from industry. Supporters of the newest adjunct of the National Research Council had hoped the meeting would inspire contributions to cooperative building research.

More than 250 research people and building industry representatives heard discussions on influences of weather and climate on building design and construction. Existing research was reviewed and the need for additional research explored.

C. F. Rassweiler, vice president in charge of research for Johns-Manville Corp., was chairman of the conference. The program was arranged by William H. Scheick, director of BRAB since last September. The conference was the first of a series planned by BRAB.

Equipment men see 1950 a better year

Henry Perez
Associate Editor

Despite a record volume of building in 1949, construction machinery sales declined over the previous year. Yet members of the Associated Equipment Distributors, holding their 31st annual meeting at Chicago this week, felt that 1949 was still a good sales year generally and that 1950 would be even better.

1949 showed decline

Quoting an AED survey, Frank G. Knight, the association's executive secretary, indicated that 75 percent of the reporting members showed sales declines in 1949. These ranged up to 25 percent, with a 15 percent median. The paradox of more construction with less equipment sales was explained in various ways. Most dealers thought contractors had overbought in early postwar seasons, when equipment became available after years of shortage. The wide-open equipment market—like an oasis to a thirsty desert traveler—rushed in to re-equip thoroughly. Many over-extended their machinery inventories in anticipation of contracts that never materialized.

Dealers thought that a considerable volume of extra equipment was purchased at that time in anticipation of a price rise. This slowed 1949's sales. And some believed that last year's decline in sales was due in part to another type of contractor crystal gazing—that some of those in the market for new machines held off buying in the belief that prices would drop. The delayed effects of the 1949 reluctance to buy are expected to boost 1950 sales, and are one of the prime causes of AED members' current optimism.

In this respect, more than half the distributors think 1950 will be a year of high sales (up to 10 percent over 1949) although not equal to 1948's record volume of more than $1 billion. Re-educated sales staffs and more intensive selling are given as other reasons for the expected rise.

Active selling needed

Soul searching on the part of some distributors made them attribute 1949's drop to their own sales forces. The return to the buyers' market—which all agree has arrived—has forced distributors to shift from taking orders to active and creative selling. Many felt that the 1949 shakeout was extremely healthy in that it re-awakened dealer management, as well as sales staffs, to the healthier practice of selling equipment on its merits than on its availability.

In a few instances, war surplus equipment is still pestering dealers, some members said. They believe there is still enough of this around, particularly in large seaports, where it arrives from abroad, to disrupt the normal pattern of sales and distribution.

Profitwise, no clear picture emerged from the meeting. Many dealers had increased profits last year in spite of lowered volume. This was achieved by concentration on high-profit lines at the expense of those with lower margins. On the other hand, many members reported profits down even more than sales volume. Increased overhead and greater sales expense were blamed.

Members expressed concern over North Carolina's program of direct equipment purchase for force-account road building (ENR Aug. 25, 1949, p. 10), but believed that the practice would not be followed elsewhere.

Collections are still a prime concern of many distributors, it was indicated, with more than half reporting them fair to poor. Dealer inventories were believed satisfactory by 70 percent of the reporting members; 25 percent thought them too high; five percent felt they are too low.

Rental purchase options and, especially, trade-in deals were reported increasing. About 80 percent of the deal-

HOW'S MACHINERY BUSINESS?

"Business was off slightly in '49 because customers were buying for replacement only"—C. P. Cramer, Cramer Machinery Co., Portland, Ore. . . .

"In '49, we equalled '48, and expect the same for '50"—W. J. Tuerk, H. O. Penn Machinery Co., N. Y. . . . "We were off 15 percent last year, but in '50 we'll do better, because our staff has been educated to sell"—J. W. Plant, Arnold Machinery Co., Salt Lake City. . . . "Our 1949 business was down 26 percent, but we'll get 10 percent of that back in 1950 because of expanding highway and airport work"—H. D. Anderson, Rish Equipment Co., Bluefield, W. Va. . . . "Our '49 sales were equal to 1948, but only because we took on more lines"—Selby Miller, Miller Equipment Co., Grand Rapids. . . . "Contractors have decided prices aren't going down, so they're buying again"—C. A. Humphreys, Overton and Ross, Dallas. . . . "Business in '50 should be as good as '49, but we'll have to work harder for it"—C. H. Green, W. F. Surge Equipment Corp., New Orleans.

ers said they used the former method to spark sales. Over 40 percent said it was becoming steadily more in demand. Thomas M. Sheehan, Empire Equipment Co., Sioux Falls, S. D., told the meeting that buyers still remember the high prices paid for equipment in the immediate postwar years and so expect a too-high trade-in on it now. He suggested that manufacturers assume some of the responsibility—perhaps by granting a special discount in trade-in actions to move more equipment. He would then have the manufacturer share in the profit (or loss) on the resale of the traded machine.

Trade-in nuisance

Clarence Y. Palitz, Credit-America Corp., N. Y., also recommended that the manufacturers share a reasonable part of the trade-in allowance on obsolete equipment. But he urged that such contribution be made only after the machine has been scrapped. The present trend, he said, is again toward exploitation (by prospective purchasers) of the nuisance value of obsolete machines solely to force concessions from the dealer. Scrapping the unit, even though its salvage value is less than the cost of removal and junking, is necessary to prevent the machine from re-appearing as a concession-getter in future transactions.

On another distributor problem—that of financing—C. M. Weinberg, of Brown-Bevis Equipment Co., Los Angeles, recommended that dealers handle time sales, preferably carrying the account themselves. Only that portion which they are unable to handle should be passed to banks or finance companies, and even then, the distributor should arrange for the financing. While commercial rates are reasonable in proportion to the service rendered, Weinberg said, advantages of self-financing are:

Suggests equipment rental

Increased profit; closer contractor-dealer relationship; a shorter time lapse during the selling phase; greater competitive advantage because of this additional service rendered the customer.

Harry E. Shaw, Service Supply Co., Philadelphia, pointed out benefits to dealers of operating an equipment rental service:

It makes new equipment easier to sell; it is an outlet for, or source of income from, trade-ins; it can be self-sustaining. Operated properly, and adequately financed to carry on in both busy and dull seasons, it can become a blue-chip enterprise and not merely a side issue, he said.

In general, distributors felt the equipment manufacturers are doing a good job of producing equipment and helping the dealers' salesmen. Some smaller dealers, however, expressed the belief that manufacturers would have to ship machines on consignment. They were unwilling, or unable to carry a large quantity of high-cost equipment in their yards or showrooms. Also, some felt that the manufacturers should ship demonstrators to enable a dealer to prove a machine's worth to a prospective buyer.

ASCE opens 97th annual meeting with medal, prize awards, new officers

E. E. Howard seated as president of American Society of Civil Engineers—Five honorary memberships are awarded

With the seating of a new slate of officers, and the presentation of its annual awards for professional achievement, the American Society of Civil Engineers opened its 97th annual meeting in New York City Wednesday.

Heading the list of new officers is Ernest E. Howard, Kansas City consulting engineer (see also pp. 10 and 36), who replaced Dean Franklin Thomas as top officer of the society.

Other new officers are:

Albert Haertlein, of Boston, Zone 1 vice president; F. C. Scobey, San Francisco, Zone 4 vice president; and these directors:

Otto Holden, Toronto, District 3; F. L. Weaver, Washington, D. C., District 5; G. H. Butler, Duluth, District 7; Louis R. Howson, Chicago, District 8; G. Brooks Earnest, Cleveland, District 9; W. J. Ryan, Tacoma, District 12; and G. W. Lamb, Topeka, District 16.

Honorary members

Highlight of the first day's events was presentation of honorary memberships—highest honor within the society's gift—to five outstanding engineers. Honored were: Charles B. Breed, professor emeritus of civil engineering at Massachusetts Institute of Technology; William P. Creager, of Buffalo, N. Y., specialist in hydraulic engineering; Wilford W. DeBerard, Chicago city engineer; Theodore Von Karman, world-famed aerodynamicist; and Wilbur M. Wilson, research professor of structural engineering, emeritus, at the University of Illinois.

Medals and awards listed

Additionally, the society presented a total of 13 medals and awards to its members for outstanding professional achievements.

Recipients were:

The Norman Medal, to Gerard H. Matthes, formerly director of the U. S. Engineers' Waterways Experiment Station; the J. James R. Croes Medal, to F. H. Kellogg, chairman, civil engineering department, University of Mississippi; the Thomas Fitch Rowland Prize, to H. M. Westergaard, Gordon McKay, professor of civil engineering, Harvard University; the James Laurie Prize, to G. H. Hickox, A. J. Peterka and R. A. Elder, hydraulics specialists; the Arthur M. Wellington Prize, to Arthur Casagrande, professor of soil mechanics and foundation engineering, Harvard University.

The Collingwood Prize for Juniors, to Alfred Machis, director of public works, Ann Arundel County, Md.; the J. C. Stevens Award, to Donald E. Blotcky, Dallas, Texas; the Karl Emil Hilgard Prize, to V. A. Vanoni, California Institute of Technology; the Leon S. Moisseiff Award, to Alexander Hrennikoff, professor of civil engineering, the University of British Columbia; the James W. Rickey Medal, to F. W. Blaisdell, University of Minnesota.

The J. Waldo Smith Fellowship was awarded to the University of California, and to S. L. McFarland, of the Bureau of Reclamation, Sacramento, Calif.; and the Daniel W. Mead Prize for students, to William H. Blair, an undergraduate at the University of California.

Social events

Other opening-day events included a general membership luncheon, at which Nelson A. Rockefeller, now president of the International Basic Economy Association (IBEA) discussed the role of engineers in world affairs; and the annual dinner-dance.

Other events scheduled for the three-day meeting included a joint luncheon for members of the ASCE and the American Water Works Association; a Construction Luncheon, and the annual men's smoker and show.

Officers elected for 1950 were:

C. F. Halladay, Halladay-Dettman Co., Sioux Falls, president; R. L. Arnold, Arnold Machinery Co., Inc., Salt Lake City, executive vice president; J. A. Benson, Benson Tractor Co., Houston; R. J. Fyfe, R. J. Fyfe Equipment Ltd., Regina, Sask., Canada; and Harry J. Hush, Griffin Equipment Corp., New York City, vice presidents; and E. J. Crosby, Hedge and Mattheis Co., Boston, treasurer.

New bulletin covers Wage-Hour Law changes

What jobs and types of construction are covered by the Wage-Hour Law will be changed slightly by the amendments effective Jan. 25.

A new interpretative bulletin on coverage is being issued by the Wage-Hour Office which will include an explanation of how the construction industry is affected by the changed definition of "production" of goods for commerce. Under the amendments, an employee will be covered if his job is "directly essential" to production. The test has been whether his job was "necessary." The general effect of this change is to narrow the law's coverage. So, some jobs previously covered now will be exempt.

The new interpretative bulletin will replace the Nov. 12, 1948, letter of the Wage-Hour Administrator to James D. Marshall, assistant managing director of the Associated General Contractors, which has served as the latest word on coverage.

That letter was issued after the Wage-Hour Office had withdrawn Interpretative Bulletin No. 5 and Regulation G162 after passage of the portal-to-portal pay law.

Until Jan. 25, a concession is being made regarding apprenticeship rates below the new 75-cent minimum wage. Apprenticeship agreements which before that date have been approved by joint apprenticeship committees will be considered as "special certificates" authorizing the sub-minimum rates. Beginning Jan. 25, new or revised apprenticeship agreements must be filed with the Administrator and a certificate obtained before the below-75-cent wage can be paid.

The Administrator has distributed a large poster announcing the new amendments which must be posted at all places where persons covered by the law are employed. This may create a problem in the construction industry, particularly on small jobs. Wage-hour officials have indicated, however, that this posting would not be strictly enforced on a construction job where the posting is impractical and there is no indication that the contractor is trying to avoid compliance with the law.

Basing point pricing showdown due soon

On January 20, the O'Mahoney Delivered Pricing Bill will start the long-awaited showdown on legalizing individual use of freight absorption and delivered pricing. That's when the Senate takes up the Conference Bill, already approved by the House.

A. D. WESTON RETIRES—

After 44 years of fruitful work for the Commonwealth of Massachusetts, Arthur D. Weston has retired as deputy Commissioner of the State Department of Public Health, where he was director of the division of sanitary engineering. He has directed more than 50 special investigations in matters of water supply, mosquito control, housing, water pollution control, and other sanitary matters. A graduate of Dartmouth, he served as a captain with the 26th Engineers Water Supply Regiment in the First World War. During the last war he was a colonel on the staff of the Adjutant General in the Massachusetts Organized Militia. He will live in Edgartown and write concerning the work of the department and the research of the Lawrence Experimental Station.

Permissive registration favored in Massachusetts

Continuation of the permissive feature of the registration law for engineers in Massachusetts was favored by a majority of the members of the principal engineering organizations.

The Massachusetts registration law was passed in 1941. Unlike most other registration laws, it did not make registration mandatory for engineers practicing in that state. In 1948, a bill was introduced in the state legislature to eliminate the permissive provisions of the law, but because of opposition was withdrawn pending a state-wide survey of opinion among engineers as to the need for change.

That survey was just completed by the Engineering Societies of New England and the Massachusetts Society of Professional Engineers. Ballots were sent to 10,200 engineers, of whom 2,355 voted to retain the permissive feature of the law and 1,829 wanted the law made mandatory.

Army-built leeves hold Ohio River basin floods

Bad weather had civil engineers working overtime in numerous locations this week, from New York City, where the water shortage remained acute, to the Pacific Northwest, where a raging storm spread disaster.

Some of the primary concern was felt in the Midwest. There, along the Ohio River and its northern tributaries, flood waters were overtopping levees and threatening sandbag defenses erected by troops. At Cairo, Ill., Jan. 16, the water was at its fourth-highest level in 90 years, within inches of its third-highest level in that period and still more than a foot below its predicted crest of 55.5 ft. scheduled to be reached Jan. 19. Cairo's record crest was 59.51 ft. in 1937.

Federal levees hold

Worst flooding was to the northeast of Cairo, in southern Indiana. There, 29 non-federally built levees had been breached this week. Of these, 13 were on the Wabash above and below Terre Haute; one was on the west fork of the White River; nine more were on the Eel River, and 6 on the Embarrass River. No federal levees had been breached at the start of the week, the Ohio River Division of the Corps of Engineers reported.

There was hope that water storage at Tennessee River dams, particularly Kentucky Dam, just above Paducah and the Ohio-Tennessee confluence, might take some of the top off the Ohio's predicted crest. But Vincennes, a center of difficulty, and Shawneetown, were having heavy rains again Jan. 16.

The trouble began with the new year—it was Jan. 8 before residents of Cincinnati saw the sun in 1950. And that unseasonal fall was followed by more heavy rains during the following week.

According to the weather man, a Bermuda high was holding a rain area stationary over the Middle West, causing the unremitting precipitation which sent swollen streams flooding over their banks.

Elsewhere, storms had made a lot of work for road and utility crews this week. The damage ran almost from coast to coast, too. In upstate New York and Canada, telephone and power poles were flattened and trees blown down by gales which blew as hard as seventy mi. per hr. In northern California, bulldozers were put to work freeing cars which were stalled in snowdrifts. There were 18 in. of snow in Seattle, and the blizzard was hitting Montana and the Dakotas, although moderating there.

CONSTRUCTION BUSINESS

January cost index tops former record

The late 1949 steel price rise pushed the ENGINEERING NEWS-RECORD Construction Cost Index for January 1950 to 484.74 a new high, almost 1 percent above its October peak. The ENR Building Cost Index, however, at 356.09 is almost 1 percent higher than in December but is still a fraction below the October 1948 top of 357.07. This is the sharpest rise in the index since August, 1948.

Common labor added its weight in setting the new record for the construction cost index—steel added 3.75 points, common labor 1.40 but lower lumber prices took off 0.73 points for a net increase of 4.42 points. (Cement is unchanged.) The skilled labor average in January also is unchanged.

Common labor starts 1950 with a 20-cities average rate of $1.485 and skilled labor with an average of $2.462 (for carpenters, bricklayers and structural ironworkers). These rates are 4.8 percent and 4.6 percent higher than last January.

Steel at $3.40 per cwt. is 4.6 percent higher than a year ago, cement at $2.96 per bbl. shows no increase, while lumber prices at the start of 1950 are 10.5 percent lower than a year ago.

Materials prices not included in the cost indexes changed only a little in January. Sand, unchanged from December, is 2 percent below January 1949. Common brick up 0.3 percent from December is 2 percent higher than a year ago. Ready-mixed concrete up 0.4 percent from December is 1.4 percent higher than last January and structural clay tile is 1 percent higher now than in December or last January.

1950 in like lion; heavy contracts up 100%

In the first two weeks of 1950, contracts reported to this journal have totaled $516.9 million. This is double last year's rate but includes a start on a $200 million atomic energy plant for which exact amount of the first contract is withheld.

The other $316.9 million averages $158 million a week, compared with a January average in 1949 of $141 and a record $157 million average for the whole of 1949.

A flood of private work has raised the private contract figure 54 percent above the corresponding weeks last year. State and municipal awards are up 19 percent. The federal contracts increase is obscured by inexact figures on the AEC award.

Pipeline wage accord with Operating Engineers Union

Wages paid in each state on pipeline construction will be comparable to those paid on highway work in the same state or locality, according to a contract between the International Union of Operating Engineers and leading pipeline contractors.

This will eliminate much of the bargaining and confusion that has occurrred whenever pipeline construction moved from one state to another state where the going rate for comparable work on local projects was much different.

Texas court interprets state labor statute

Picketing by a labor union against using non-union workers is illegal in Texas, the State Supreme Court has declared. The court also redefined the term "labor dispute."

The court upheld an injunction issued at Amarillo against picketing by the Construction and General Labor Union of a construction job of H. E. Stephenson, contractor. Stephenson's employees had voted not to join the union.

A Texas law says: "No person shall be denied employment on account of membership or non-membership in a labor union."

The majority opinion of the court, written by Judge Hart, also struck down the definition of labor dispute written by the Legislature in a 1947 law against secondary strikes, pickets and boycotts. The law said a dispute must involve the employer and a majority of employees. Last year, the court held that a labor dispute might occur even though a majority of employees was not involved.

Cement stocks up 46%

Cement stocks at the end of November were 46 percent higher than a year ago. High October shipments of 21.3 million barrels of cement dropped off in November to 18 million barrels. This was 15.5 percent below October and 5 percent below November, 1948. Production in November was 2 percent behind that a year ago.

For the first 11 months of 1949, shipments were 2 percent above 1948 and production was up 3 percent. Shipments varied greatly as to region, with increases in 9 districts and decreases in 8. They were up 20 percent in the South Atlantic and Rocky Mountain areas, and up 15 percent in Michigan. Most regions showed only minor changes, but Puerto Rico and Tennessee declined 12 and 10 percent respectively.

Stocks of finished cement are now a little over 9 million barrels, or about 12 days' supply at the annual rate of 205 million barrels.

December housing starts set record month, year

Housing units started in December set an all time record for that month (79,000) and brought the year's total to an unprecedented 1,019,000. The 79,000 starts in December, 1949 were 50 percent above a year ago and 34 percent above the record compiled in December, 1947.

The year 1949 broke all records for number of housing units started, exceeding by 9 percent the previous 1925 high of 937,000 units as estimated by the Bureau of Labor Statistics. Quarterly comparison of 1949 starts with 1948 follow:

	Nonfarm dwelling units started 1949	1948	% chg
1st quarter	169,800	180,000	−5
2nd quarter	279,200	297,600	−6
3rd quarter	298,000	263,800	+13
4th quarter	272,000	189,900	+43
Year	1,019,000	931,300	+10

Seattle wage formula means no change in 1950

Wages in the Seattle building trades are set for 1950 at the 1949 rate. A formula agreed upon by the building trades council there automatically fixes the wage scale for each year on the basis of the level of the consumers' price index of March 15 the preceding year.

Only the bricklayers will get higher wages this year than last, because they broke away from the council and arranged a separate contract.

National Water Well Assn.

More than 100 water well contractors, manufacturers and engineers attended the first meeting of the National Water Well Association in Chicago last week. Robert R. Storm is executive secretary, with headquarters at Urbana, Ill. A central information service bureau was set up in Urbana to clear data on underground water resources and related problems.

BIDS AND BIDDERS

(Major project news received after Construction Reports, page 67, went to press.)

Residences and Stores—Hub Hill & Associates, Dallas, Tex., plan to go ahead in March on 2,000 residences at Diamond Hill addition, near Dallas, Tex., to cost $12,000,000. A shopping center will cost an additional $1,325,000.

Recovery Plants—Plants to recover sulphite waste liquor from wood pulp are planned by the Soundview Pulp Co., Everett, Wash., at Everett, to cost $6,000,000; by Crown-Zellerbach Corp., Camas, Wash., at Camas, $6,000,000; by Weyerhaeuser Timber Co., Tacoma, Wash., at Everett, $4,000,000; and by Rayonier, Inc., Shelton, Wash., at Hoquiam, $2,500,000.

Gas Pipe Line—Southern California Gas Co. and Southern Counties Gas Co., Los Angeles, Calif., plans constructing 82-mi., 30-in. steel pipe line from Puente, Los Angeles County, easterly via Riverside, Beaumont, Banning, to junction with existing line from Texas to cost about $6,000,000.

Housing—Kenwood Gardens, Inc., Cleveland, O., will construct by own forces garden type apartments at Toledo, O., to cost about $4,500,000. Weinberg & Teare, Cleveland, are architects. Porter W. McDonnell, Toledo, is consultant.

Reconstructing Brooklyn Bridge—J. K. Welding Co., Inc., Brooklyn, N. Y., has been awarded contract for reconstructing suspension spans of Brooklyn Bridge, over East River, connecting Manhattan and Brooklyn Boros, by the Department of Public Works, City of New York at $3,317,537.

Earthwork and Structures—United Concrete Pipe Corp. and Vinnell Co., Alhambra, Calif., have been awarded contract by the Bureau of Reclamation, Tracy, Calif., for improving Delta-Mendota Canal and Firebaugh Wasteway, Central Valley Project, Calif., at $3,967,484.

Junior High School—Board of Education, Cincinnati, O., has plans nearing completion for junior high school at Roselawn Station, Cincinnati, to cost $3,335,000. C. F. Cellarius, Cincinnati, is architect. Fosdick & Himler, Cincinnati, are engineers.

Sewage Treatment Plant and Airport—Public Utilities Commission, City of San Francisco, Calif., received low bid for grading, paving runways at San Francisco Airport, near San Bruno, from Morrison-Knudsen Co., Inc., San Francisco, $2,595,053; bids were also received on Southeast Sewage Treatment Plant from Walsh Construction Co., Rogers Construction Corp., and J. H. Pomeroy, all of San Francisco, at $2,132,118.

Residences—Newbridge Park Realty Co., San Mateo, Calif., awarded contract for residences at San Mateo, Calif., to Belle Haven Realty Co., San Francisco, at $4,000,000. Oleg Ivanitsky, San Francisco, is architect.

Runways—Construction Aggregates Corp. and Peter Kiewit Sons' Co., New York, N. Y., have been awarded contract for placing fill and drainage facilities for runways and taxiways at Newark Airport, Newark, N. J., at $5,968,250. Contract was awarded by the Port of New York Authority, New York, N. Y.

Apartments—Joseph H. Kanter & Co., Birmingham, Ala., plans apartments, with playgrounds and parks, at Cincinnati, O., to cost about $3,000,000. Pembleton & Mims, Birmingham, Ala., are architects.

Power Plant—Fairbanks, Morse Co. awarded contract for power plant at Beloit, Wis., to Stone & Webster Engineering Corp., New York, N. Y., to cost about $2,500,000. This is first unit of proposed $10,000,000 modernization and building program for company plants throughout the United States.

Transmission Line—Department of Water & Power, City of Los Angeles, Calif., will take bids Feb. 1, for 225 miles of transmission line from Owens Gorge in Mono County to Receiving Station E in Los Angeles County to cost about $2,000,000. S. H. Morris, Los Angeles, is engineer.

Manufacturing Plant—Budd Co., Gary, Ind., plans constructing first unit of plant at Gary, Ind., to cost about $3,000,000. Giffels & Vallet, Detroit, Mich., are engineers.

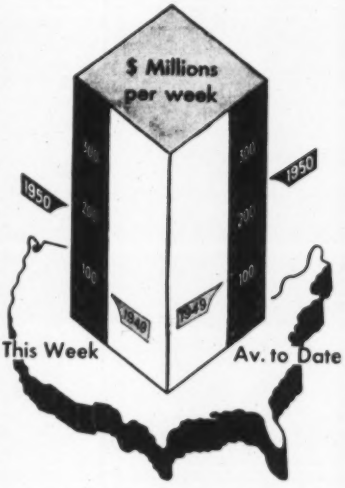
Tecolote Tunnel and Access Road—Carl M. Halvorson, Inc., and H. Halvorson, Portland, Ore., have been awarded entire construction of Tecolote Tunnel and Access Road, Calif., under Schedule 3 at $4,750,455 by the Bureau of Reclamation, Denver, Colo.

Hotel—Penn Harris Hotel, Harrisburg, Pa., plans constructing an addition to the Penn Harris Hotel, to cost about $2,000,000.

COSTS AND VOLUME

ENR INDEX NUMBERS

Index Base = 100		1913	1926
Construction Cost	Jan. '50	484.74	233.01
Building Cost	Jan. '50	356.69	192.49
Volume	Dec. '49	310	136



Activity This Week

As reported to ENR (in million of dollars)

Amount of contracts let

	Week of Jan. 19 1950	Cumulative 1950 (3 wks.)	Cumulative 1949 (3 wks.)	% chge
Federal	$22.7	$255.9	$54.3	+371
State & Mun.	55.6	178.1	134.3	+33
Total Public	$78.3	$434.0	$188.6	+120
Total Private	103.9	265.1	165.0	+61
U. S. Total	$182.2	$699.1	$353.6	+98

Contracts by type of work

	This Week	Cumulative 1950 (3 wks.)	Cumulative 1949 (3 wks.)	% chge
Waterworks	$2.8	$22.3	$8.1	+175
Sewerage	1.8	10.1	15.2	−34
Bridges	5.2	20.6	20.5	
Highways	19.5	54.4	39.3	+38
Earthwork, Waterways	11.9	22.7	45.5	−50
Buildings, Public	25.7	280.4	50.0	+461
Industrial	22.9	49.0	30.6	+60
Commercial	65.6	187.5	120.0	+56
Unclassified	26.8	52.0	24.4	+113

NOTE: Minimum size projects included are: Waterworks and waterway projects, $25,000; other public works, $50,000; industrial buildings, $68,000; other buildings, $250,000.

New Capital for construction

	Cumulative 1950 (3 wks.)	Cumulative 1949 (3 wks.)	% chge
NON-FEDERAL	$165.8	$212.6	−22
Corporate Securities	73.0	103.7	−30
State and Municipal	92.8	108.9	−15
Total Capital	$165.8	$212.6	−22

PERSPECTIVE . . . .

Experiment in Economy

Six months ago—amid considerable fanfare devoted to the possibilities for economy—the U. S. government launched its first Hoover-committee-sponsored agency, the General Services Administration.

The experiment had direct significance for construction:

It consolidated two government building services—the former Public Buildings Administration and the Bureau of Community Facilities—into one organization, under new titles of the Public Buildings Service and the Community Facilities Service.

It consolidated much of the government's purchasing.

Third, to construction men in their role of citizens, the new agency held out the promise of major savings through business organization of federal functions.

Now, almost exactly six months after GSA was constituted, and with another session of Congress in Washington due to be confronted with proposals for similar consolidations, Washingtonians are taking a look at the performance.

The verdict: Pretty good, so far.

The problem of setting up something new in the midst of the sprawling bureaucracy of the U. S. government—particularly something that was intended to absorb, cut down and regularize a great many agencies that had existed nearly independently for many years—is not and never will be an easy one. It takes a man of force, without too many political ties. President Truman selected big Jess Larson, of Oklahoma, a former artillery colonel who had headed the War Assets Administration with good success. Lawyer, ranchman, mayor of Chickasha (1929) and holder of many state jobs, Larson was a good choice. He had moved up to Washington from the job of secretary to the commissioners of the Oklahoma State Land Office. There, he managed and supervised operations involving about $200,000,000 in state assets, divided between land, oil holdings, farm mortgages and state, municipal and government bonds. At war's end, he took over the badly riddled WAA, and was one of the few administrators in Washington's history to leave a post of that kind unscathed by any comment and with loud praises ringing in his ears.

The task he faced was huge.

What Congress had created was an agency charged with the task of coordinating and streamlining the buying, records management, buildings management, and certain public works functions of government.

It has taken six months, and the job isn't yet done, but the reorganization is beginning to shape up. It is coming through a welter of planning, preliminary detailing and coordination studies. A Federal Supply Service, a Records Management Service, a Public Buildings Service, and a Community Facilities Service have been established.

To aid him, Larson appointed Russell Forbes—an authority on governmental purchasing and supply—as Deputy Administrator of General Services. Forbes, who had headed up the Hoover "task force" on the supply problem, has led the move toward establishment of top staff offices. Under his leadership, with the Washington departmental organization nearly completed, a regional pattern is now under study to set up ten field operations.

With his eye on the annual government purchasing bill that totals something over $8,000,000,000, Larson now is concentrating on bringing in scientific management methods of purchasing, warehousing and cost control as well as improvement of relations with suppliers.

As a matter of fact, Uncle Sam will have to spend some more money to save a lot of money. Larson has already requested allocations from the President's fund for management improvement studies, to conduct studies for the integration of supply and records management functions. It will be necessary, he insists, for the government to make an initial investment for competent personnnel and equipment in specialized technical and professional fields to realize later in savings forecast by the Hoover Commission.

In detail, the four major branches of the GSA are:

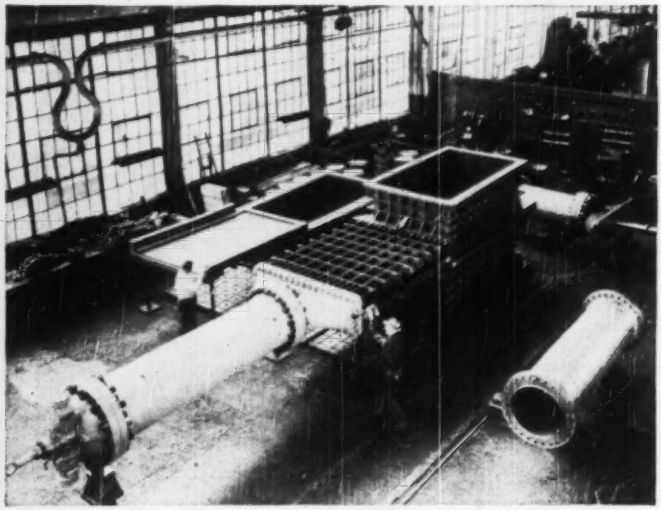
The **Federal Supply Service**—This was formerly the Bureau of Federal Supply and the Office of Contract Settlement in the Treasury Department. GSA is now responsible on the policy level for the formation of plans, methods and procedures involving all phases of supply, including procurement. For instance, a new purchase-order-invoice-voucher form is being developed to make substantial savings each year in the area of small purchases. Continuous studies of inventory-level needs and replenishment schedules are now in effect, looking toward a system of simplification, standardization, and economical systems for purchase, inspection, storage and issue.

Jess Larson
. . . must spend to save.

The **Records Management Service**—This includes the National Archives Establishment; it will consolidate field records centers. (It has been estimated that if all the government records file cases were placed along a railroad track, they would cover the distance between Chicago and Washington, D. C. It costs the government $27,000,000 a year to house these records.) Larson is urging a government-wide house-cleaning program.

The **Public Building Service**—Formerly the Public Buildings Administration of FWA; this service has now received all real property functions which are being handled by the Divisions of Design and Construction, Real Property Acquisition and Utilization, Buildings Management, National Industrial Reserve, and Surplus Personal Property Disposal.

The **Community Facilities Service**—Formerly FWA's Bureau of Community Facilities, has the Public Works Construction and Public Works Planning Divisions. Its program includes advance planning, water pollution control, and the Alaska and Virgin Islands works.



RIVER, STAY 'WAY—Twenty-six gates like that shown here are being assembled for the Conenaugh Dam, in western Pennsylvania, a flood control structure. Weighing 35 tons, gates are fabricated by the Metal Products Division of Koppers Co., Inc., at Baltimore. Center is a gate complete with bonnet and lifting cylinder. Behind it is a partially assembled gate.

Ratcliff heads growing HHFA research

Housing and Home Finance Agency has set the machinery in motion to carry out the broad research assignment that Congress included in the Housing Act of 1949. This came with the appointment recently of Richard B. Ratcliff as director of its research division.

The housing act authorized HHFA for the first time to carry out research—almost unlimited in scope—both on the housing market and on building materials, methods and techniques.

HHFA plans to confine its research to basic problems that are beyond the scope of private industry and of business or professional groups. Specific research projects will be carried out under contract by existing organizations and laboratories. The objective will be to develop fundamental data that will be useful to the entire industry.

Congress appropriated $2,333,000 to finance the research program for the current year. Of the money budgeted to the two research fields—economic and technical—more than $1,300,000 will be used to finance projects under contract to organizations and laboratories outside HHFA. Technical research projects of this kind will get about $725,000, and some $600,000 will go to contracting agents for economic studies.

Ultimately, the program will take in a broad range of investigations and studies, including building codes; standardized materials and methods (modular coordination); improved design and construction; new types of components and equipment; performance standards for testing materials; appraisal, credit, housing supply and demand, finance and investment, and other market data; land cost and use; site planning; and zoning regulations.

None of the research will be directed toward development of specific products or equipment. HHFA intends to coordinate its larger programs with the research work being carried on privately.

In the technical field, the first objective will be to continue and extend current investigations. HHFA already has awarded contracts for two projects: one to Penn State College on condensation control and another to the Public Health Service for completion of septic tank studies. Two more are about to be closed with Penn State and the University of Minnesota for psychrometric investigations on temperature and humidity.

Discussions are well along on a half dozen additional contracts with universities and other organizations. HHFA has already assembled data on lightweight aggregates for concrete. It now plans studies on reinforced lightweight concrete and on lightweight concrete masonry units. It proposes also a more detailed investigation of plumbing components by the Bureau of Standards and analysis of data by the Weather Bureau on wind and snow loads. Other projects might take up chimneys and flues and standards for fire safety.

Demonstration housing projects are under active consideration for a dozen universities and laboratories. These projects would develop data on the economies of modular coordination and make time and motion studies to determine costs of various erection methods.

Report due this month on Ohio floodway plan

Mahoning-Grand River proposal would lower sewage costs for numerous cities—Cost estimated at $50,000,000

An Army Engineer report is expected this month on a proposal to build a Mahoning-Grand River floodway in Ohio. The $50,000,000 proposal would find its greatest value in holding down sewage treatment costs for municipalities in a large area of northeastern Ohio.

Testimony was taken at a hearing at Warren by Col. C. P. Hardy, Pittsburgh engineer. The proposal is to build a diversion weir in the Mahoning River north of Warren, and to dig a channel thence northward into the Grand River basin. In periods of high water, the Mahoning's surplus would be diverted into the basin. In low-flow periods, water would be pumped from the basin into the Mahoning, to regulate its flow.

Sewage advantages seen

Fred H. Waring, chief engineer for Ohio's health department, testified that Youngstown, Warren, Niles, Painesville and other cities could save large sums on sewage treatment costs. Sizable increase in the Mahoning's flow, as a result of the floodway, he said, would make it possible for Youngstown to get by with only primary sewage treatment. The city now is negotiating with an investment banking syndicate to finance a sewage disposal system to cost $10,000,000 or more.

Other witnesses estimated that northeastern Ohio cities might save $50,000,000 in sewage treatment costs alone, based on the estimated 50-year life of the project. Opponents, though, asserted the project would cost $85,000,000, not the $50,000,000 which had been estimated as its cost by federal engineers.

Fisheries plan fight on Snake River dams

See Ice Harbor and three other dams destroying industry—Urge work on Columbia River projects instead

Goaded into action by a statement by Col. William Whipple, Walla Walla district engineer, that the Corps of Engineers plans to push for construction of the Ice Harbor and three companion dams on the lower Snake River, the Columbia River fishing industry is preparing a last ditch fight.

"If the lower Snake River dams go in, we will be virtually destroyed," said J. H. Cellars, secretary of the Columbia River Salmon and Tuna Packers Association. Half of the August run of salmon spawns in the Snake River.

The industry plans to send delegations to Washington to conduct the battle when budget hearings are held.

More power on Columbia

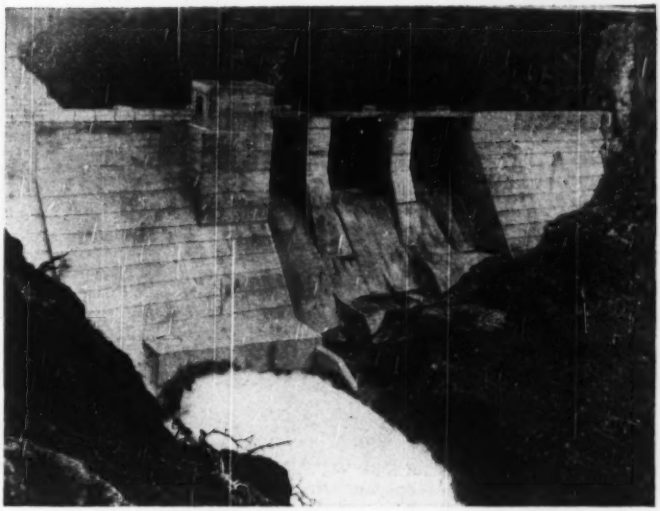
While admitting that the proposed dams would provide some hydroelectric power, it is pointed out by the fishing industry that all four of them, at their rated capacity, would not produce as much electricity as McNary Dam and not half as much as could be obtained from the proposed Chief Joseph Dam on the Columbia between McNary and Grand Coulee.

"Elimination of the Snake River dams from the current Columbia basin development program will not deprive the area of needed electric power or reclamation projects," said Cellars. "In fact, it will result in more rapid provision for adequate power if available funds, instead of being divided, are concentrated on big power-producing dams."

The fishing industry is offering no opposition to construction of dams on the Columbia above McNary. Outside of construction of McNary and Chief Joseph dams, the industry points out that there are many sites with high power coefficients which could be built without harm to fishery.

Recalling that the Snake River dams were designed primarily to provide slack water navigation between Pasco, Wash., and Lewiston, Idaho, the packers declared that benefits from the navigation facilities thus provided would not represent a fraction of the value of salmon resource they would destroy.

"It is obvious that the engineers are driving for construction of Ice Harbor because they know that, if started, then all four dams must be built and the department will have years of work ahead," said a statement issued by the Packers' Association.



NEW CANADIAN DAM—Dedicated recently was Ladore Dam, at the outlet of Campbell Lake on Vancouver Island, British Columbia. It raises the water level 56 ft. and stores 260,000 acre-ft. Its completion ended the second phase of B.C. Power Commission's John Hart project, which has cost $13,750,000 so far. Dam is 342 ft. long with a maximum height of 140 ft.

Trucks to pull over on Arizona hills

Arizona's highway department, in an effort to avoid congestion on present and proposed highways, will incorporate uphill truck lanes and turnout bays on mountain grades.

Under direction of W. C. Lefebvre, state engineer, field studies have been completed on seven typical locations on transcontinental routes. From basic data it was determined how far a heavy truck will travel up various grades before reaching the crawl speed of 7 mph.

It was determined that on a 6 percent grade, a loaded truck will lose speed at the rate of 23 mph. per 1,000 ft. of grade. It requires 1,700 ft. to reach the crawl speed from a level approach speed of 47 mph.

Engineers determined the added cost of truck lanes and turnout bays would be compensated in time saved by passenger traffic and a reduction of the accident potential.

With consideration of a design policy under which no vehicle should travel slower than 25 mph. on the open highway, future Arizona road construction may be based on this formula, Lefebvre said:

Where a 5 percent grade is longer than 1,500 ft., or a 6 percent grade longer than 1,000 ft., provision should be made for slow-speed vehicles to move over and keep high-speed lanes open.

First project altered to meet the new requirements is the 1,240-ft. Queen Creek tunnel on U. S. 60 above Superior.

Surveys showed trucks would have a speed of 6 mph. under contemplated grade levels. Originally tunnel plans called for a 26-ft. width. But to allow for an uphill truck lane, the tunnel will be 40 ft. wide with two 12-ft. uphill lanes, a dividing strip, and one 12-ft. downhill lane.

Cumberland River project slated to start in March

Army Engineers are less than two months away from starting work on a large Cumberland River lock. With it will be a medium-low type dam which will permit installation of 30,000 kw. of power.

That would be Cheatham Lock, part of a program for comprehensive development of the Cumberland River valley. It is to be 110 ft. wide and 800 ft. long, with 800 ft. guide walls. Bids are to be opened next month. Construction of Cheatham Dam is scheduled to begin later. Both projects are expected to total about $12,000,000 in cost. With two other projected locks and dams, Cheatham will provide a nine-ft. navigation channel from the Ohio River to Nashville.

DELAWARE MEMORIAL BRIDGE will have world's sixth-longest suspension span. Easy by-pass of Philadelphia area will be possible when new bridge is complete. Next bridge upstream is at Camden, N. J. Note (map) that N. J.-Del. border runs along River's east bank.

Crossing the Delaware—from Delaware

By building the Delaware Memorial Bridge, the State of Delaware is making an important contribution to an objective shared by other Atlantic Coast states—smoothing the flow of coastwise vehicular traffic.

The map above shows that the new crossing will be the first one to be built below Philadelphia; that it will be the only crossing from Delaware to New Jersey; and particularly that it will make New Jersey's projected toll highway a useful facility rather than a quick route to a bottleneck—the existing Newcastle-Pennsville ferry. As the schedule stands, this bridge will be ready June 1, 1951, six months before completion of the New Jersey road (ENR Oct. 27, p. 36). Delaware already has a four-lane divided highway from the bridge southward to the Maryland line.

The four-lane bridge's principal feature is the suspension structure, whose 2,150-ft. main span will be the world's sixth longest. Main channel clearance will be 175 ft., and side-spans will be 750 ft. long. Including approaches, overall structure length is 10,750 ft. In addition to the suspension span anchorages and tower piers, the bridge will be carried on 41 approach piers and 2 abutments. Sixteen million dollars worth of foundation work was let in 1948 to three contractors. Merritt-Chapman & Scott Corp., New York, has all the river work, including the suspension bridge piers and six approach piers.

Conduit and Foundation Co., Philadelphia, has the twenty Delaware land approach piers and the west abutment, and Lewis and Bowman, Inc., Norfolk, Va., has the fifteen New Jersey approach piers and abutment. Substructure work had advanced sufficiently by January, 1950 to allow the American Bridge Co. to start erecting steel under its $13,700,000 superstructure contract, which was let the previous January. Engineering and supervision are being performed by Howard, Needles, Tammen & Bergendoff, with Homer Seely as project engineer. Owner is the Delaware River Crossing Division (Delaware State Highway Department), W. W. Mack, director.

(Note: Construction of river foundations is described below. Information on the east anchorage will be expanded in an early issue, by A. L. Davies, assistant to the president, Merritt-Chapman & Scott Corp. The approach story—how two contractors accomplished similar jobs by different methods— will be told later.)

Part 1 Mammoth Caisson for River Foundations

Working along a mile and a quarter of bridge centerline, Merritt-Chapman & Scott are building 10 river piers, including four approach piers on the west and two on the east, two anchorage piers and two tower piers. The west anchorage pier and both tower piers are being built by the open-dredged caisson method; the east anchorage pier in a cofferdam. This cofferdam job, which includes an unprecedented 26,700-cu. yd. tremie seal and other features of like magnitude, will be covered in another article.

Also unprecedented, at least in size, is the caisson for the western anchorage.

Its plan size at cutting edge is 95x 221 ft. The cutting-edge girder, standing 13 ft. high, has outside box-girder walls 4 ft. thick and inside stiffening box-girder diaphragms 2 ft. 9 in. thick. Four longitudinal diaphragms and eleven transverse diaphragms leave

square spaces which contain the lowest rings of sixty 15-ft. dredge wells.

A typical outside wall frame (in a vertical position normal to the wall face) is made up of three panels rigid-welded from structural shapes: a triangle at the bottom to form the cutting edge, surmounted by two 4 x 4-ft. squares. The inside-diaphragm frames consist of 2 ft. 9 in. x 4 ft. rectangles, one atop the other, at the same levels as the outside-frame squares. Frame spacing is 2 ft. 6 in. in the walls and 2 ft. 2 in. in the diaphragms. All wall and diaphragm frames are connected at panel points by horizontal structural shapes. Steel plates form the box-girder webs and make the structure watertight. Web plates are continuous for the cutting edge and transverse girders.

Backbone of the cutting edge itself is an 8 x 8 x ½-in. angle. At the 45-deg. junction of the basic plates, where they are welded to the angle, there are two more thicknesses of plate, for strength and abrasion. Weld build-up forms the edge.

The cutting-edge girder is topped by braced steel-plate walls set back 4 in. all around. Overall caisson height is 106 ft., allowing for sinking to El. −96.

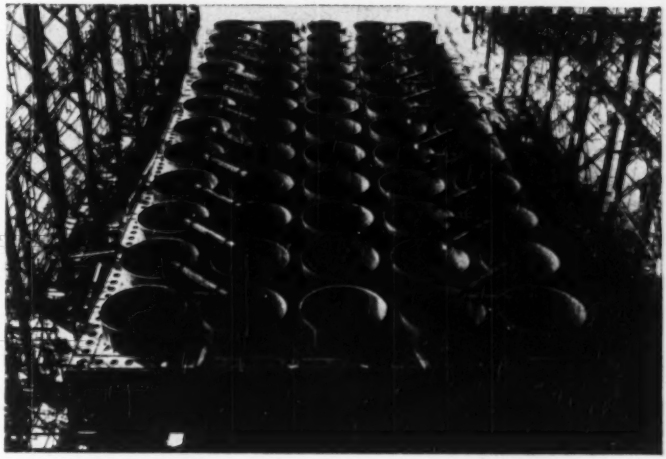
As indicated on the drawing, the anchorage pier structure is offset near the top in its long dimension, longitudinal with the bridge. It steps back 18 ft. at −20, on the channel side; and it overhangs 20 ft. at −10 on the shore side. The step is formed after the caisson is sealed, by roofing the front row of dredge wells with precast lids, then building a buttressed wall on up at the set-back position. The overhang is built within a three-sided cofferdam tied to the caisson.

The remainder of the structure consists of concrete between the dredge wells, tremie-seal concrete within the cutting-edge chamber and inside the wells to a point 15 ft. above the edge, and a reinforced concrete distributing block 10 ft. thick covering the whole pier at El. +5. This makes the top-of-block about 15 ft. above low water. Water is admitted to the cylindrical dredge-well spaces.

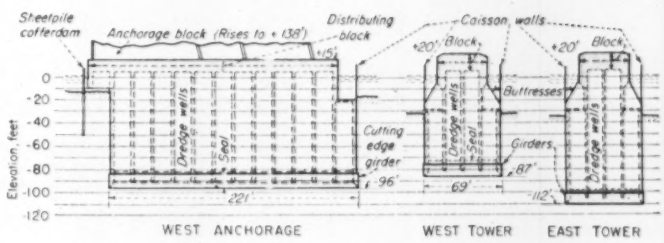
Anchorage blocks

Above the distributing blocks, the Merritt-Chapman & Scott contract includes only part of the anchorage blocks, consisting primarily of heavy sidewalls that will support the cable-anchorage saddles, and contain deadmen for splayed cable strands. The anchorage will be completed under another contract after the cable spinning is complete.

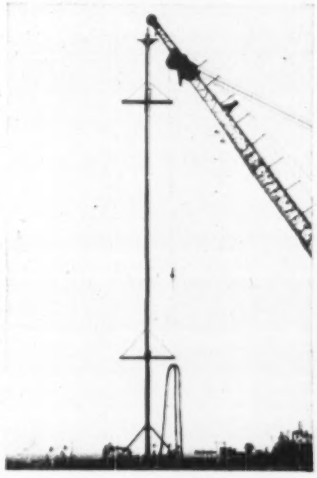
Total weight of the west anchorage is 200,000 tons. Buoyancy on the



CUTTING EDGE for west anchorage was built in Camden, N. J., shipyard, launched from ways just like a seagoing vessel. Of 95 x 221-ft. plan size, it contains 60 dredge wells 15 ft. dia. (Willard Stewart)

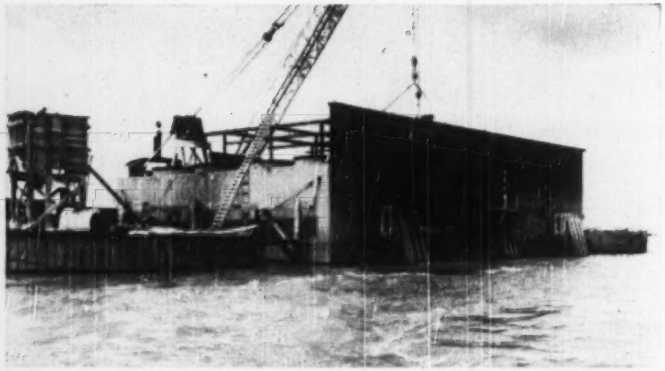


OPEN-DREDGED CAISSONS were used for the tower piers and the west anchorage. The east anchorage is built in a cofferdam.



ROTARY JET for cleaning out caisson bottom has two horizontal nozzles at lower end. "Yard-arms" keep jet centered in well. (Willard Stewart)

SOUNDING WEIGHT shaped like inverted mushroom probes bottom to check on effectiveness of clean-up before seal placement. (Willard Stewart)



BUILDING UP CAISSON for tower pier—Floating crane adds a side section as sinking proceeds inside guide pen made up of sand islands and dolphins. Part of new bracing also shown. (ENR staff)

structure is 64,000 tons. Total cable stress is 19,000 tons acting at 14 deg above the horizontal, 90 ft. behind and 250 ft. above the caisson's front cutting edge. Under full load, foundation pressures vary from 4.8 tons per sq. ft. at the back of 7.6 tons per sq. ft. at the front.

Building the big anchorage

As a preliminary to actual caisson-sinking and pier-building for the western anchorage, the contractor had a large amount of off-site and on-site work to do.

Off-site it was a ship-building job; on-site it was a mooring placement job. For construction of the cutting edge girder, the contractors engaged the New York Shipbuilding Corp., who put the job in one of its Camden, N. J. warship-building ways. Upon completion, the cutting edge was launched, in true ship fashion, and towed to a pier in Philadelphia where its sides were built up 34½ ft. before it was towed down the Delaware to the bridge site. This whole procedure took a year, the caisson arriving at the job Nov. 1, 1949.

Meanwhile, the contractor built 30-ft. sand islands and steel-pile dolphins, to prepare a guide pen for the caisson. Two sand islands (circular sheetpile cells filled with sand) were located outside each caisson long-side line, near its ends, to provide substantial resistance to tides acting on the caisson. Two steel-pile dolphins, each consisting of three plumb and three batter piles, were located on the shore short side. The islands and dolphins were framed with fender systems which allowed 4 ft. leeway for the caisson.

Spotting the big caisson

The caisson's cutting edge girder, with 34½ ft. of added sides, was carefully timed to arrive at slack low tide. As soon as the caisson was in place two more dolphins were driven to close the pen.

To get the cutting edge onto the river bottom, floating mix plants placed concrete inside the caisson, to a depth of 21.8 ft. Caisson position was maintained during this phase by blocking from the sand islands and pile dolphins. Position control was obtained by optical-transit triangulation observations from the four river-side stations of a quadrilateral established for the job.

The next step, sinking the big caisson by clamshelling from dredge wells to barges and concreting between wells, now is under way.

Suspension tower piers

It is possible to anticipate some of the contractor's later methods by looking at his tower pier work, which is more advanced. Caissons for these piers are similar to the big caisson, but smaller, having four transverse rows of seven 15-ft. dredge wells. Cutting-edge plan size is 69x116 ft., and founding elevations are −87 (west) and −112 (east).

On the tower piers, when an open caisson approaches bottom, working chambers are cleaned out with a hanging underwater pipe jet, illustrated; the bottom topography is sounded with an inverted mushroom-type weight, also illustrated. The pipe jet consists of a 12-in. vertical pipe feeding a double nozzle horizontal distributor. The distributor is a 4-in. pipe drawn down to 1¼-in. nozzles at both ends. Water pressure is supplied at 350 psi.

Two sets of struts projecting from the vertical pipe keep the jet centered in a well, while it is rotated slowly to level the earth at the bottom. Progress in leveling the bottom is checked by the mushroom sounding device, whose lateral projections probe in under the stiffening diaphragms. Final removal of muck is by air lifts.

Tremie seal concrete is placed and the caisson is unwatered sufficiently to allow for the following work: Within the caisson, the outer long rows of wells are capped off at El. −30 and the inner rows are carried up to +5, to be topped by a reinforced concrete distributing block 15 ft. thick and 45x116 ft. in plan; walls of the high section are buttressed (see drawing) at eight positions on each side.

Total tower load on each pier is 20,600 tons, and the maximum foundation pressure is 8.3 tons, including pressure due to dead load, temperature and a quartering wind of 30 psf. on the suspended structure, and 35 psf. on the towers, cables and suspenders.

Early tower pier procedure

Going back to the early stages of tower pier work, the caissons were prepared in much the same manner as was the big one. They were slipped cross-stream between two fendered 68-ft. sand islands and penned in by dolphins. Sinking proceeded evenly through fairly uniform material—a fact that justified the engineers' decision to omit lubricating jets from tower-pier caissons. Tower caisson work is pictured on this page.

Merritt-Chapman & Scott's other river piers, four on the west side and two on the east side, will support deck-truss approach spans. They have capped wood-pile foundations surmounted by pedestals and twin shafts with spandrels joining the tops. These piers were constructed by ordinary methods, in sheetpile cofferdams, with untreated piles driven underwater and with reinforced 5½-ft.-thick concrete distributing blocks above 6-ft. tremie seals. Maximum water depth at these piers is 9 ft., at low tide. The largest pier has 360 piles.

Equipment on job

The contractor has marshalled a substantial share of his East Coast floating construction equipment for this job. Major items include two concrete plants and ten floating cranes as well as accompanying barging and towing equipment. Because the big on-site sheetpile driving and concrete-placing jobs took place in connection with the construction of the east anchorage, the plant will be covered more specifically in the article scheduled to describe that structure.

Project manager for Merritt-Chapman & Scott is William Denny, under the direction of Ralph E. DeSimone, vice-president.

For Cities: Ways to Cut Costs

CITIES can save money and still improve services. That's the gist of study —"How Cities Can Cut Costs"—by the International City Managers' Association.

The study is in the form of a check list of more than 500 questions which in themselves are an excellent guide constructive economy. They are grouped into two general classes: Those that indicate a generally accepted standard method or procedure; and others that involve governmental structure. Among questions listed in the first group—matters of prime consideration for city managers and public works officials—are:

1. Have procedures been set up to assign day-to-day responsibility for control of costs, such as requiring the chief administrator's approval before departments are permitted to fill personnel vacancies?

2. Are department heads required to submit work programs and justifications in support of dollar estimates when submitting budget requests?

3. Are liability, fire and other types of insurance purchased on a competitive basis, using specifications and receiving bids from both stock and mutual companies?

4. Has the use of service charges been considered to cover costs of those services which are of more direct benefit to the individual receiving the service than to the public at large?

5. Have collection costs of utility charges been reduced by lengthening meter-reading and billing period for small consumers?

6. Do charges for municipal services supplied to areas outside city limits cover full costs of such services?

7. Has consideration been given to making the county the smallest unit for collection of taxes; appointing rather than electing tax collectors and consolidating in one tax bill all taxes imposed by all jurisdictions?

Use special assessments

8. Are special assessments used to defray a substantial part of local-improvements costs—such as water and sewer lines, pavements and sidewalks —which predominantly increase land values?

9. Have supplies and equipment used by all departments been standardized, and has a centralized purchasing system been set up?

10. Are positions eliminated and consolidated wherever possible, and when consistent with service requirements?

11. Are accurate cost records kept on construction work to determine whether work can be done more cheaply by city forces or by contract?

12. Has consideration been given to establishment of a central shop to service and maintain all city-owned automotive equipment, to operate a motor pool for trucks and passenger cars, and to provide specialized services such as blacksmith, electrician and plumber?

13. Has separate collection of different classes of refuse been eliminated by combined disposal or divided truck bodies?

14. Are specialized inspectional units combined so that each man has more inspection in a smaller area?

15. Has consideration been given to combining administration of city-owned water, gas and sewerage systems?

16. Has integration of some fire and police services to make more effective use of manpower been considered?

17. Have park and recreation activities been consolidated in one department?

Overlapping Keeps Costs High

Governmental structure is in part responsible for high costs of local government.

Some overlapping units and functions of local governments can be eliminated by "acts of local governing boards, administrative orders or voluntary agreement," the report pointed out. Other changes can be made effective only by legislative action or by a revision of the city charter.

Suggestions in the check list designed to eliminate overlapping of jurisdiction and prevent duplication of services, personnel and equipment include:

1. Have townships been abolished as units of local government and number of counties reduced by consolidation?

2. Have the city and county in large metropolitan areas been consolidated?

3. Have broad home rule powers been extended to local governments in states?

4. Have adjoining counties or smaller cities appointed joint personnel to perform selected services in the management, health, welfare, legal and engineering fields?

5. Has the city entered into any formal or informal agreements with other nearby local government units for joint construction of municipal facilities—such as hospitals, and joint operation of services such as police radio broadcasting?

6. Have formal provisions been made for contacts with other levels of government by definitely placing upon some official the responsibility of acting as liason officer and as a source of information to other city departments in matters concerning the federal, state and county government?

Copies of the study may be obtained from the Public Administration Clearing House, 1313 East 60th St., Chicago, Ill.

AEC sets up study of reactor radioactivity

Well aware of the possible effects on the surrounding community of its new reactor stations, the Atomic Energy Commission has initiated an elaborate system of monitoring radioactivity.

According to an AEC publication, in handling radioactive wastes in the atomic energy program an extensive program of area monitoring has been undertaken at sixteen sites in the vicinity of the Brookhaven Laboratory on Long Island, N. Y. Each of the stations consists of a frame building with radiation detection and recording equipment.

When the nuclear reactor operation first begins, data on radiation conditions will be gathered at each station. The health and physics staff will maintain close cooperation with meteorology and reactor operating groups throughout the country.

Once the reactor is functioning and general radiation effects have been learned, routine monitoring will begin. Radiation-counting and laboratory facilities are being set up for routine analysis of laboratory sewage and of vegetation, soil and water samples collected at selected points in the area. These activities are expected to provide continuing routine control data and will supplement more detailed surveys made by biological survey groups.

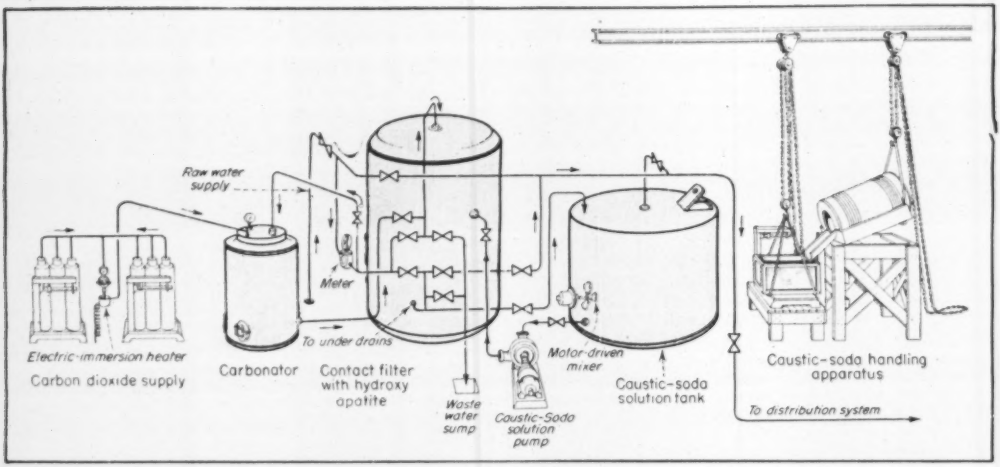


Fig. 1. EXCESS FLUORIDE is removed by passing raw well water through synthetic hydroxy apatite in a closed pressure system. The adsorptive material is regenerated by caustic soda. Residual caustic in the media is neutralized by carbonic acid.

How To Take Fluoride Out of Water

TOOTH-DAMAGING amounts of fluorides—in excess of the upper limit needed to inhibit decay—are being removed from the public water supply at Britton, S. D. Removal of the undesirable quantities of fluorides is accomplished in a pressure-contact installation—the first of its kind in the United States. Fluorides are reduced from 6.7 ppm. in raw water to 1.5-ppm. equivalent in delivered water.

Fluorosis—mottling of the teeth—shows up in almost all of Britton's children at an early age. To remedy this health hazard, the U. S. Public Health Service initiated this fluoride-removal project in cooperation with the city officials. This was done because of the scanty data available on fluoride removal, and reluctance of consulting engineers to enter this uneconomic field of unknown knowledge.

The Britton project, which was financed in equal portion by the city and USPHS, is the result. It is admitted that this project is not the "last word" in fluoride removal. Continuing studies and experiments are being carried out on this installation. The findings are expected to speed up the interest in and construction of fluoride-removal units.

Three-step processing

Fluoride-laden water from two 1,000-ft. wells is pumped through the totally closed plant by deep-well pumps, treated effluent being discharged directly to the distribution system. An elevated 350,000-gal storage tank on the distribution system maintains consumer pressure and supply when pumps and plant are not operating. Pressure-controlled switches actuate the deep-well pumps.

With a design capacity of 200 gpm., the $15,000 Britton plant was built to demonstrate that fluorides can be taken out of water supplies by simple low-cost processing. It consists of a contact filter, filter-media regenerating equipment and a neutralization system.

Contact filtration

Raw water is forced downward through the contact filter, a closed vertical cylindrical steel tank, by the well pumps (Fig. 1). The lower portion of this tank contains a bed of synthetic hydroxy apatite (a combined form of calcium, phosphate and hydroxide) that adsorbs fluorides. This bed is supported on a 12-in. three-grade layer of gravel. Underdrainage is through 0.25-in. brass umbrella strainers on a pipe grid.

After eight months of shakedown operation, the plant is on a three-day cycle. Daily runs are about 15 hours long.

At the end of the three-day cycle, adsorptive media is regenerated in about one and a half hours during the evening. This is done by backwashing and forcing caustic-soda solution through the media followed by a neutralizing rinse.

Adsorptive media is backwashed before regeneration to loosen the bed and drive off foreign matter, mud, sand and pipe scales. Either raw water under deep-well pressure or treated effluent can be used for backwashing. Waste water is discharged through a sump to the sewers.

Caustic-soda solution from a steel mixing tank is forced downward through the filter media by a small electric-motor-driven centrifugal pump. The solution is delivered to a cross-shaped pipe grid located just above the surface of the media. Small holes in this pipe grid, pointed 10 deg. below horizontal, direct the flow in a circular motion downward through the media.

Regeneration of filter media is accomplished with about 4,000 gal. of caustic-soda solution.

Regenerative solution saved

After caustic treatment, a portion of the caustic solution is withdrawn from the contact filter by the centrifugal pump and returned to the mixing tank as salvage. This is followed by a caustic rinse using 1,750 gal. of raw water which is discharged to waste.

Carbonic-acid solution is then passed through the media for neutralization of the caustic residual. Just enough is passed through to reduce pH of the rinse water to about 7.7.

DESIGN AND ENGINEERING DATA FOR DE-FLUORINATION PLANT, BRITTON, S. D.

Process: Contact adsorption of fluorides in water by hydroxy apatite in pressure tank; regeneration of contact media by dilute caustic-soda solution; application of carbon dioxide to neutralize causticity in contact bed.

Treatment Capacity: 200 gpm.

Plant Performance: Reduction of fluorides from about 6.7 to 1.5 ppm.

Contact Filter: 9 ft. dia., 15 ft. high vertical, steel pressure tank; 300 cu. ft. hydroxy apatite. Operation pressure range 40 to 50 psi.

Regenerating System: 9 ft. dia., 9 ft. high covered, vertical steel tank for diluting caustic soda; solution forced through adsorptive media by 265 gpm. electric-motor-driven centrifugal pump; solution applied to media through pipe grid with ½-in. holes pointing downward, 10 deg. off horizontal; caustic soda delivered in 400-lb. drums; two differential chain hoists for handling caustic soda.

Carbonator: 3 ft. dia., 7 ft. high steel pressure tank; carbon-dioxide gas delivered from six 150-lb. dry-ice cylinders resting on two platform scales; gas passes through coil in hot-water cup on way to carbonator to prevent freezing; automatic temperature control for hot-water cup; gas through diffusers bubbled upward through raw water to form carbonic-acid solution.

Housing: Reinforced concrete and brick structure with bituminous-gravel roofing and metal roof supported on light weight trusses.

Total Construction Cost: $30,000, including laboratory, connections from two wells to plant, housing and process equipment

When the contact filter has been regenerated and neutralized, a skillful changeover of pressures from running to waste to picking up elevated-tank load is required. This is facilitated by pressure gages on the tank and raw-water line. By equating these pressures carefully, the treatment plant is returned to operation without surging and disturbing the filter bed.

It should be pointed out that the closed, pressure-type treatment plant has one important disadvantage: processing cannot be closely observed and controlled.

Making up regenerative solutions

Caustic soda is delivered to the plant in 400-lb. steel drums. One overhead differential hoist is utilized to lift drums to a hinged cradle and to tip the cradle so that the drum spills into a charge box on a platform scale. The other hoist, suspended from a monorail, carries the charge box to and dumps it into the mixing tank.

Carbon-dioxide gas is supplied from 150-lb. dry-ice cylinders. The installation consists of two platform scales on each of which rest three cylinders. Cylinders discharge to the carbonator, a vertical rubber-lined cylindrical steel tank, through an electric-immersion heater (Fig. 2). The heater, controlled by an aquastat, maintains constant temperature in the hot-water cup and prevents clogging of carbon-dioxide lines by freezing.

Carbonic acid is formed in the carbonator by bubbling the gas upward through downflowing raw water.

Monthly operation costs are not now available. This is so because new methods of regeneration are being explored in a continuing effort to reduce chemical costs and improve effectiveness of fluoride extraction.

The fluoride-removal plant is located in a small brick and concrete addition to the municipal firehouse. The roofing is a bituminous-gravel mixture over light metal roof supported on open-web steel joists.

The USPHS is going ahead with development of the fluoride-removal process. Within a short time, a pilot plant of improved design will be put into operation in Texas. If the initial results are satisfactory, a full-scale unit will be installed for that locality.

F. J. Maier, sanitary engineer of the USPHS dental public-health division, is responsible for Britton's process. He also supervised construction and guided initial operation of the plant. Herman Rohr is water superintendent for the city.

Participating in the process development were: Infilco Inc. and Pure Carbonic Inc., both of Chicago, Ill., who also supplied filter media, piping, valves and tanks, and carbonation equipment, respectively.

Perkins and McWayne of Sioux Falls, S. D., were engineers for the foundations, drains and building.

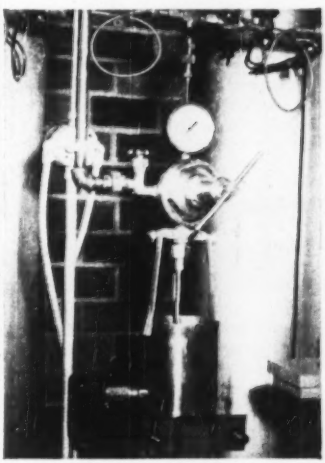


Fig. 2. FLOW of carbon-dioxide gas is maintained by an electric immersion heater that prevents clogging of lines due to freezing.

Superchlorination Results Hailed by British

Since its first use in 1940, superchlorination has displaced chloramine treatment in the London Metropolitan Water Board's well waters with remarkable success.

According to an article in the British journal, THE SURVEYOR, no bacteria coli has been detected in 99.92 percent of 1,772 samples drawn from wells treated by superchlorination during the past five years.

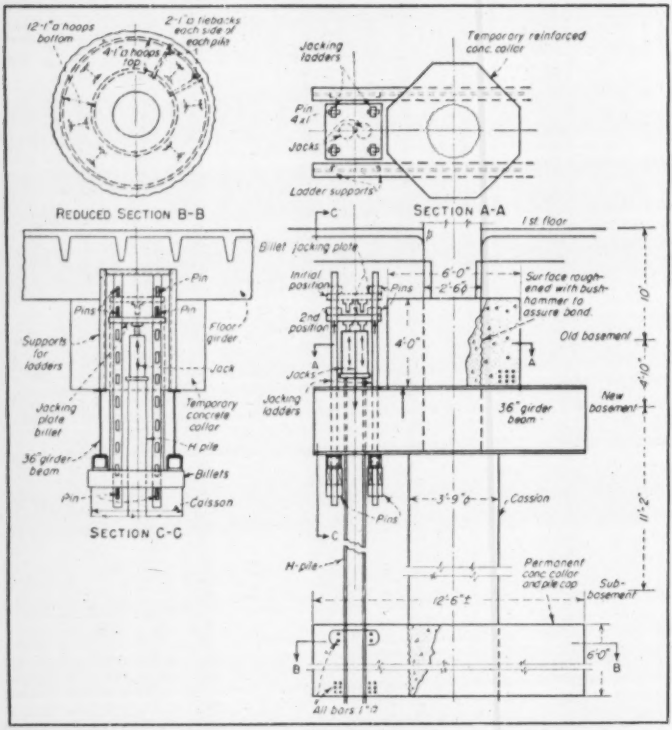
One well in particular—normally liable to pollution—has given 100-percent satisfactory samples after superchlorination and dechlorination since June 1946.

Economic values of the superchlorination method were listed as:

Contact tanks—The increased speed with which superchlorination destroys bacteria permits a reduction in the size of contact tanks in the Thames Valley to one-half of that previously required. This reduction alone makes a large saving in capital costs.

Pre-treatment basins—Before introduction of superchlorination, the only means of reducing tastes and color was pre-treatment. Experience is as yet insufficient to speak with certainty, but indications are that the majority of tastes can be removed by superchlorination and it seems unlikely that any additional expenditure for pre-treatment basins is justified.

Chemicals—It is estimated that saving in cost of chemicals will amount to more than $30,000 a year, due chiefly to discontinuance of ammonia gas and ammonium sulphate dosage, and a reduction in chlorine used.



HOW steel H-piles, in conjunction with concrete collars as load-transfer elements, were used to "underpin" old concrete caissons.

Settling Caissons Picked Up by H-Piles

Elwyn E. Seelye and C. H. Throop

Seelye, Stevenson & Value, Consulting Engineers, New York, N. Y.

A NOVEL and difficult underpinning job in cramped basement space was completed this past summer during the remodeling of a Chicago building. Poorly founded concrete caissons were encircled by steel H-piles sunk to rock, and the load transferred by concrete collars engaging both the old and new construction.

The piles were jacked down 90 ft., and then driven the last 15 or 20 ft., when the jacking reactions proved inadequate. The work provided a full-size test of the ENGINEERING NEWS pile formula, and furnished proof that the gripping action of concrete, as supplied by a collar, can be depended upon to carry large loads.

The foundation work was part of the alterations to a 10-year-old 10-story reinforced concrete building to incorporate it as an addition to the Carson, Pirie & Scott department store. It was started as a simple, straightforward job of sinking a few new caissons so that the height of the building could be increased. But it quickly assumed major proportions and an emergency character when the first caisson, being put down by the open Chicago method, ran out of a clay foundation into sand and gravel, which rose into the excavation under artesian force.

Open methods impractical

This unexpected development led to the discovery that the original caissons had not been sunk to rock (probably because of this condition) and that they were settling badly. Thus, the new foundation could not be put down by open methods, and some means had to be devised to underpin the existing caissons to rock—which was 110 ft. below the sidewalk level. Steel H-piles were selected and, for the underpinning work, were combined with concrete collars as the load transfer device between them and the existing caissons.

Jacking the new piles

The first use of concrete collars occurred in arranging the equipment setup for jacking the H-piles. Poured around the existing caissons just below the first floor (where the surface had been roughened to furnish a good bond) the collars served as reaction blocks for the jacks.

The reaction was transferred in the following maner. A pair of 36-in. steel girder beams, one on each side of the caisson, was placed directly under the collar and extending out over the pile locations. Jacking yokes made up of four tension ladders, acting against the bottom flange of the girders, were then placed to pass over the top of the jacks which were set on the H piles. As pressure was applied to the jacks to sink the piles it was transferred from the tension ladders to the girders, thence to the concrete collar and finally to the caisson.

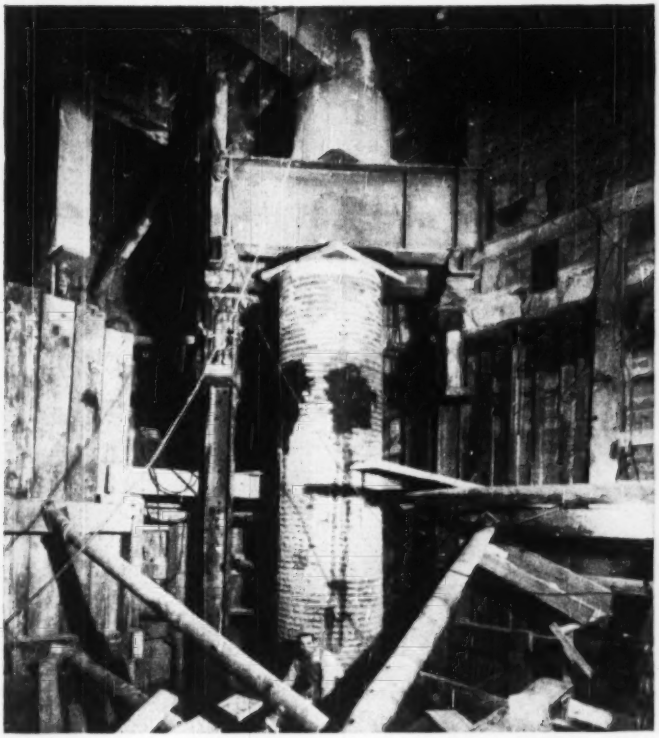
The tension ladders were constructed of double bars with welded fillers between, forming slots 12 in. o.c. Pins 4 x 1-in. in section, were inserted in those slots to hold the jacking plate, a billet pierced with holes at the four corners so that it could be slid down over the tension ladders. The jacks reacted against this billet, and after each 12 in. extension of the jack ram, the billet was lowered to the next set of slots and the jacks reset.

This operation was repeated until the bottoms of the ladders were reached. The jacks were then removed, a new pile section welded in place and the jacking procedure continued. By this arrangement it was possible to jack piles in 8 to 10-ft. sections to a total depth of 90 ft.

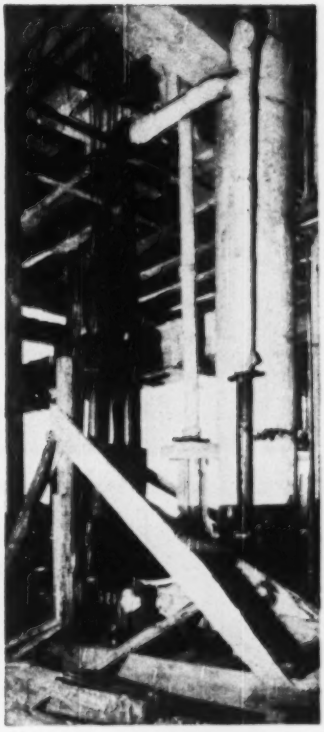
Hammer necessary

At this point the capacity of the jacking equipment, as well as the available dead load on the caissons, was reached, and driving had to be resorted to for the last few feet to rock. This was accomplished by hanging the hammer from the second floor and through a hole made in the first floor. To prevent settlement of the caisson, which might be caused by vibration from the driving, temporary shores were places between the jacking collars and the tops of the piles.

The procedure was to free two piles (of a group of 6 or more), drive them to rock and then re-shore. After all piles had been driven in this manner, the second or permanent concrete collar was placed below the level of the new subbasement. This engaged both



EXCAVATING in preparation for pouring the permanent concrete collar which tied the old caisson and the new steel piles into a single foundation. The temporary collar is at the top above the steel beams against which the piles are shored.



DRIVING piles to rock after jacking them as deep as possible. Pile driver hangs from second floor.

the caisson and the new piles so that all worked together as a single foundation. And since the piles were shored against the temporary jacking collar, they were prestressed when the permanent collar was poured. After the permanent pile cap collar had set up properly, the temporary jacking collar was removed, and the piles were cut off.

A variation of this procedure on some of the foundations (where the contractor would have had complications with cribbing) was to pour the permanent concrete collar as soon as the first two piles had been driven to rock. In the meantime the caisson was supported by the other piles shored up to the temporary collar. Holes were left in the permanent collar through which these other piles passed. Then, as these piles were driven to rock in pairs, the holes in the collar were grouted.

In all, it was necessary to "underpin" eleven caissons in this manner and to install three new pile foundations by jacking and driving a total of 92 piles.

In the course of this job, useful information was developed on two points—on concrete bond, and on a comparison of actual driving resistance and "formula-resistance" of piles. On the latter, the piles, which had been brought up under a jacking load of 220 tons, were then started down with an average of 35 blows per inch of penetration. Since a hammer with a driving energy of 15,000 ft. lb. was used, this resistance is equivalent to a safe load of 115 tons according to the ENGINEERING NEWS formula. Allowing a factor of safety of 2, a fair check on the resistance indicated by the formula was obtained.

Shrinkage movement

The successful use of concrete collars is of interest because engineers and contractors have an inhibition against them on the supposition that shrinkage of the concrete will reduce the bond even though the surface has been well roughened. There is so much misunderstanding and doubt about this that it is well to point out that there are two movements due to shrinkage of the concrete.

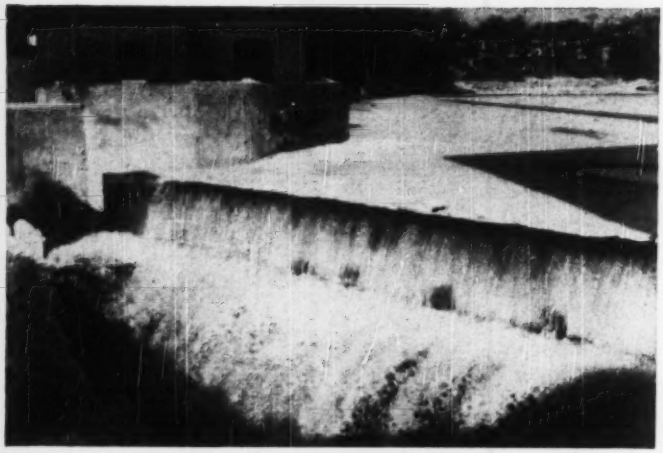
As the collar shrinks, its circumference is reduced. This causes the inside circle of the collar to become smaller and grip the column. On the other hand, the shrinkage causes the radial thickness of the collar to become less which tends to relax the grip.

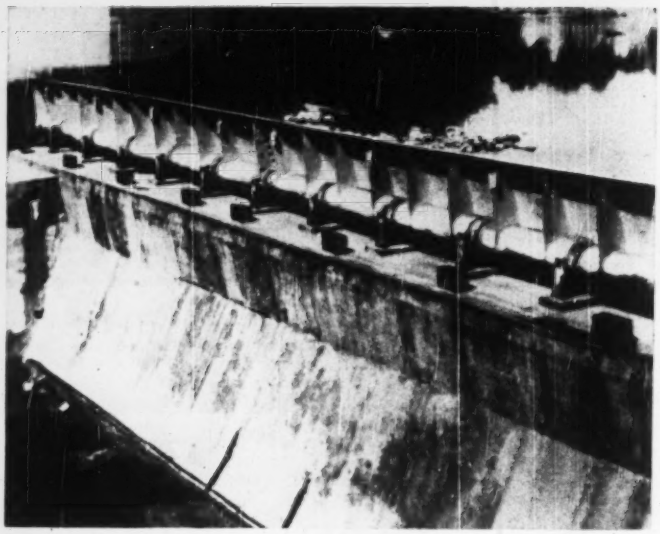
If C is the coefficient of shrinkage, R the mean radius of the collar, and B the radial thickness, the net movement of the inside surface of the concrete collar due to both shrinkage actions is equal to:

$$RC - BC/2$$

Obviously, the value will remain positive under any condition, so that the bond is actually improved by the shrinkage of the concrete.

Architects for the job were DeYoung, Moscowitz & Rosenberg while the general contractor was George A. Fuller Co. Gooder-Henrichsen Co., Inc., was the foundation contractor. The jacking ladder was designed by Verne O. McClurg, consulting engineer of Chicago, and the idea for driving the piles after the limit of jacking had been reached was suggested by Patrick H. Murphy of Seelye, Stevenson & Value, New York, which, as the consulting engineer on the job, originated the underpinning method and supervised the operation.





FIRST GATE of the bascule type to be built was installed on the dam of the L. S. Starrett Co. across Millers River at Athol, Mass. This gate is 3 ft. high and 98 ft. long.

Bascule-Type Crest Gates Simplify Pond-Level Control

W. E. Hollingshead
Sales Engineer
S. Morgan Smith Company, York, Pa.

CREST GATES of a design believed to be new to this country have been installed on five dams during the past few years to provide an improvement over the type of pond control normally supplied by flash boards in the past. They range in length from 25 to 100 ft. and in height from 3 to 8 ft.

This bascule type of crest gate consists of a gate leaf—curved for proper flow conditions in both raised and lowered position—attached to a tube mounted on a series of half-bearings located along a step near the crest of the dam. Its chief advantages over flash boards and similar types of control devices are speed in both lowering and in raising and the long, unobstructed crest that is provided when the gate is down. Also, debris and even good sized logs can be quickly dumped downstream by lowering the gate, and ice near the crest can be broken up and skimmed off by a similar maneuver.

Gate details

Principal details of this type of crest gate are given in the accompanying drawing. The gate leaf is a steel plate attached to the gate drum by stiffening ribs, and the drum has steel journal surfaces that rest on the bronze lined half bearings across the dam crest.

Transversely, the gate is made watertight by a rubber sealing strip mounted on a flexible steel plate secured to the concrete wall back of the drum. Water pressure from above keeps this rubber strip in close contact with the drum at all times. And as the journal bearings extend only about 250 deg. around the drum they do not interfere with this seal. The seal is protected against damage by a projecting plate, as shown in the drawing.

Heat prevents freezing

At the ends of the gates, similar rubber seals bear on plates attached to the pier faces. Some of the gates installed to date have been equipped with electric or steam heaters to eliminate ice trouble at the end seals. Heating the drum prevents ice from forming along the horizontal seal.

At each end, the gate drum passes through the pier-facing plate in a conventional packing box to a dry pit where the operating mechanism is installed.

At all of the dams listed in the accompanying table, with the exception of the one at Mason City, Iowa, the gates are designed to operate automatically by means of a float control, accumulator system and hydraulic cylinders, with oil pressure from 300 to 400 psi. When the pond reaches a predetermined upper level (usually with 6 to 12 in. of water overtopping the gate), the gates lower automatically. When the pond reaches a lower predetermined level, they rise automatically.

The speed of raising or lowering is governed by a throttling valve, and usually is about one foot per minute.

Overtravel by a gate in either direction is prevented by a compensating mechanism.

A pressure-relief valve is provided in the oil line so that in case of excessive pressure being applied against the gate leaf by ice or debris, the gate will lower automatically to permit the debris to pass over the crest; then it will rise again.

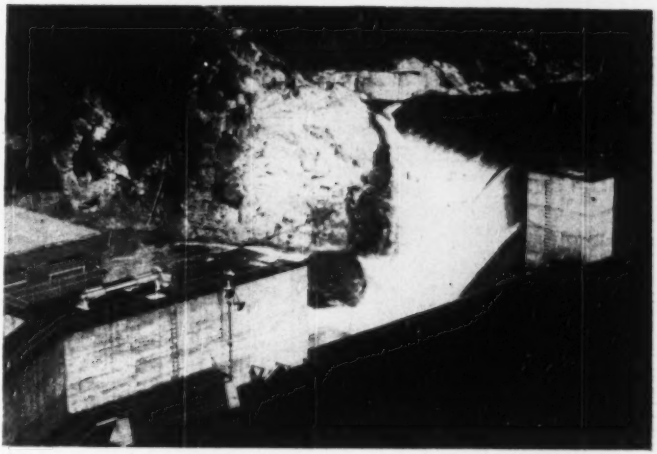
Manual control

At Mason City, the control is modified to make it possible to put the gate into operation at any point from full open to full closed by means of a hand operated pointer located on the control board, which has a dial indicating the full range of gate travel. This pointer is connected to one end of a floating lever which operates the control valve. The other end of the floating lever is connected to the gate to compensate for gate travel. With this system, the gate stops in the position corresponding to the setting of the pointer.

Motor-driven operating mechanism could be used with the float control, if desired.

The first of these gates to be installed in this country was at the dam of the L. S. Starrett Co. at Athol, Mass., on the Millers River. Following the disastrous flood on that stream in 1938 the consulting firm of Chas. T. Main, Inc., of Boston recommended to the Massachusetts Department of Public Works that the crest of the Starrett dam be lowered. As permanent lowering would reduce the usefulness of the dam, installation of a crest gate was proposed, and the bascule type was adopted as best fitting the requirements.

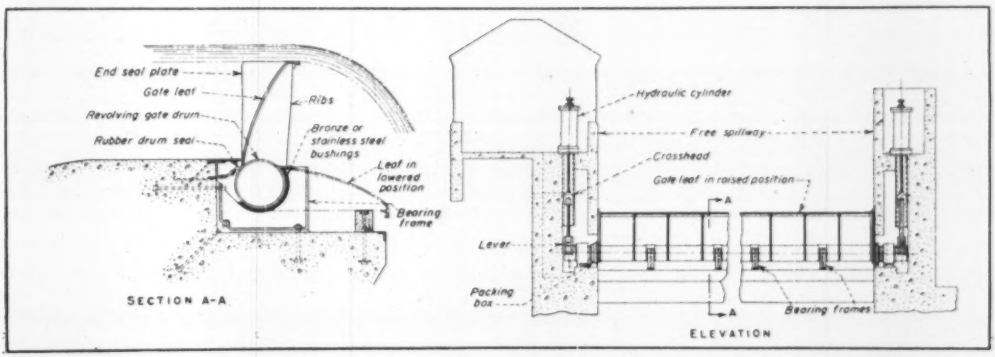
Patents for features of the gates and control mechanism are owned by the S. Morgan Smith Company, York, Penn., which designed and built all of the bascule-type crest gates described in this article.



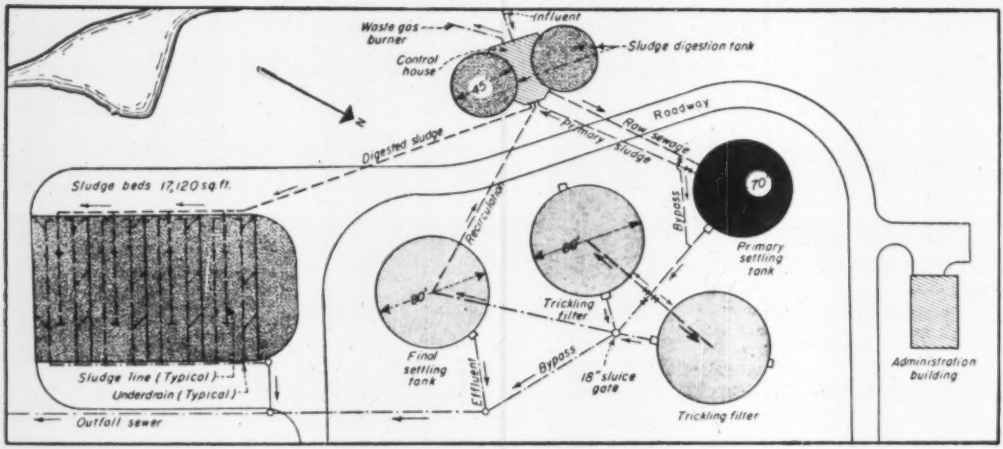
NORMAL REGULATION of the pond at Woods Falls on the Lamoille River in Vermont is by a bascule-type gate on the spillway in the foreground. Flashboards on the crests beyond are lifted to pass flood flows.

PLANTS WHERE BASCULE-TYPE CREST GATES HAVE BEEN INSTALLED

Installation	Number	Height	Length	Type of Operation	Year Installed
L. S. Starrett Co., Athol, Mass.	1	3′	98′	Hydraulic Automatic Float Control	1939
Chase Turbine Co., Orange, Mass.	2	4′	40′	Hydraulic Automatic Float control	1940
Peoples Gas & Electric Co., Mason City, Iowa.	1	4′-6″	58′	Hydraulic Manual Control	1947
Public Electric Light Co., Woods Falls, St. Albans, Vt.	1	6′	100′	Hydraulic Automatic Float Control	1948
Public Service Company of N.H., Berlin, N.H.	1	8′	25′	Hydraulic Automatic Float Control	1948



BASCULE-TYPE CREST GATE designed to give better operating control of pond levels than is provided by flash boards.



DESIGNED TO FIT the available site, treatment plant includes two sludge digesters adjacent to the control house, a primary settling tank, two trickling filters, final settling tank, and glass-enclosed sludge-drying beds.

Sewage Treatment Plant for a Small City

Rollin F. MacDowell
Consulting Sanitary Engineer
Cleveland, Ohio

POLLUTION ABATEMENT in the Sandusky River and Bay and along the south shore of Lake Erie was advanced substantially last August when Fremont, Ohio, started operating its new sewage treatment plant.

The sewage treatment plant is of the high-capacity (bio-filtration) single-stage, trickling-filter design. It is the first plant of this type to be constructed in Ohio, to serve a municipality. Both the degree of treatment required and the topography of the plant site were considered in the selection of the type of plant to be constructed.

The plant is designed to treat an average daily sewage flow of 2.0 mgd., including a reasonable amount of industrial wastes, with a recirculation rate of 1.5 to 1.0 and a maximum wet-weather flow of 5.0 mgd. without recirculation. The design is based on the assumption that dilution by storm water will reduce strength of sewage and therefore amount of recirculation required.

The design also contemplates removal of 75 to 85 percent of objectionable materials, depending upon sewage flow rate and sewage concentration and condition.

The control house, located between two digesters, contains all of principal operating controls for the plant. It contains a ground-floor level and superstructure, a basement and a sub-basement. The sub-basement has two levels—an operating floor and a sewage-flow channel.

Pumping required

The city's sewer system terminates at the plant in a 30-in. sanitary trunk line about 26 ft. below ground surface, making it necessary to provide pumping facilities at the plant. Sewage flow is regulated at the flow-channel entrance by a float-operated valve. The float is set to close the valve at a predetermined sewage level below operating floor of the sub-basement. This

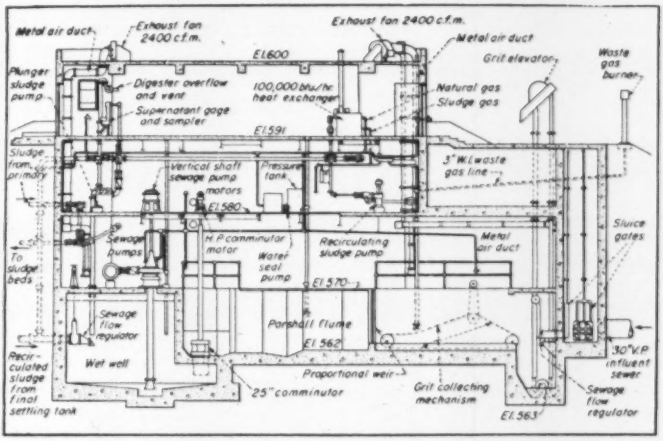
PRIMARY SETTLING TANK (foreground) is designed for a 1½-hr. detention period at 5.0 mgd. Trickling filters (right foreground) are designed for a BOD removal of 2.0 lb. per cu. yd. per day, at a raw BOD of 150 to 300 ppm.

will prevent flooding during periods of excessive wet weather flows or power failure at pumps.

Sand and grit are removed and sewage is screened ahead of pumps to prevent excessive wear and possible pump clogging. A straight-line grit channel, with collecting equipment, separates grit from sewage. Velocity is kept constant by baffles and a proportional weir. Grit is washed and then conveyed to ground surface at the rear of the control house by an endless-chain elevator. Washed grit will be used for fill around the plant.

Following grit removal, sewage is measured by a Parshall flume with a meter register located at ground-floor level. Sewage is screened by a 25-in. comminutor and a bar screen by-pass. It is then discharged to the wet well where it is mixed with recirculated sewage and sludge.

Part of the effluent and all of the sludge from the final tank are recirculated to the wet-well. Three sewage pumps, each with a capacity of 2.5 mgd., lift mixed liquor to the primary settling tank. Under normal operating conditions, two pumps will be adequate, leaving one for standby service.



FOUR-LEVEL control house is focal point of design. Air-exhaust system keeps control house free of foul odors.

Sewage-return control

Recirculation rate from the final tank is controlled by a float-operated valve in the return line. Water level in the wet well and pumping rate remain constant. Recirculation rate varies inversely with flow of raw sewage. With a pumping rate of 5.0 mgd. and a sewage flow rate of 2.0 mgd., the recirculation rate is 3.0 mgd., while a raw-sewage-flow rate of 1.5 mgd. will effect a recirculation rate of 3.5 mgd.

Raw-sludge pumps, motors for sewage pumps and comminutor, recirculation-sludge pumps and water-seal pump are all located at the basement floor level.

Digester heat exchangers, flow-meter register, supernatant selectors, and the electric power panel are located at the ground floor level.

Design of the control-house structure dictated a very complete heating and ventilating system. Fresh air is drawn into the building through grills over doors at front and rear at the ground floor level. It is then heated by gas-fired unit heaters. Liberal use of gratings in floors at ground and basement levels permit free flow of fresh heated air between levels.

Foul air is withdrawn from subbasement level by ducts connected to blowers located on the roof. These blowers have a combined capacity of 4,800 cu. ft. of air per minute.

Natural gas is used for heating the building. Sludge gas is used in exchangers for heating sludge in digesters. The balance of the plant is designed along conventional lines with provision for expansion, as required, with minimum effort and expense (see accompanying table of facilities).

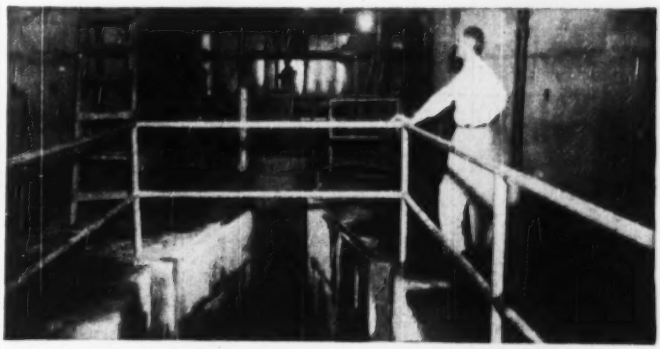
The Sandusky is sluggish

The Sandusky River serves a watershed of 1,270 sq. mi. above Fremont. It is very sluggish at and below Fremont, during periods of low flow. Mean monthly stream flow varies from a minimum of 21.6 cfs. to an estimated 21,000 cfs., with a yearly average of 834 cfs. Fall in the last 7 mi. between Fremont and Sandusky Bay is only 12 in. Pollution resulting from discharge of untreated sanitary and industrial wastes threatened existence of one of the most popular vacation spots in the middle west. Other municipalities and industries, including Tiffin, Upper Sandusky and Sandusky are following the lead of Fremont and have treatment units under consideration.

Intercepting Sewers

Fremont is divided into nearly equal parts by the Sandusky River. There are three sewer districts on each side of the river, each of which is served by combined sewers. An intercepting sewer was constructed along each side of the river to collect sanitary wastes and the first freshet flows up to 2.5 times the average daily dry weather flow, for delivery to the sewage plant. An inverted siphon—two cast iron pipe lines, 6-in. and 12-in.—was constructed under the river to connect the two intereceptors.

One pumping station was required for a low-level district on the east side of the river; otherwise all flows are by gravity to the plant. Automatic, float-operated regulating valves are located



RAW-SEWAGE FLOW is measured through a Parshall flume at the bottom level of the four-level control house, following removal of sand and grit.

at the junction of combined sewers with interceptors. These valves limit flow to plant and permit excess storm flows to be discharged to the river, dilution being sufficient to absorb wastes without creating a nuisance.

Industrial wastes

Adequate and equitable treatment of wastes from Fremont's 39 medium to moderately large sized industries played an important part in design of the new plant. These industries, for the most part, discharge their wastes into city sewers. They are classified as to character of waste, as follows:

Vegetable canneries	2
Dairies and milk processing	7
Metal processing	16
Textile products	4
Beet sugar processing	1
Miscellaneous	9
Total	39

Surveys of character and quantity of wastes from these industries disclosed that one of them (beet sugar) would be required to provide complete treatment for its wastes independent of the city sewer system. At least two more would be required to provide partial treatment of their wastes before discharge to city sewers. The balance would be accepted without pretreatment. A city ordinance for sewer service charges governs discharge of wastes and establishes charges to be made by the city to the industries based on sewage flows and strength.

The project was financed by $700,000 of voted general tax bonds approved by the people in May 1947. Construction bids were received in February 1948 and the project was completed last August. Construction contracts included: Sewage treatment plant, $500,000, by Mosser Construction, Inc., Fremont, Ohio; intercepting sewers and siphons, $117,450, by Del Construction Co., Cleveland, Ohio; and Sewage pumping station, $22,300, by Roger J. Au, Mansfield, Ohio.

The project was designed and construction was supervised by the writer, with C. H. Shively, architect, and Charles Hochenedel, civil engineer, both of Fremont, as associates.

TABLE OF PLANT FACILITIES FOR FREMONT, OHIO TREATMENT PLANT

Raw sewage flow-regulating gate, grit channel, grit washer and grit elevator.
Measuring flume with indicating, totalizing and recording meter.
Comminutor: designed for two, but only one installed initially with a by-pass bar screen.
Sewage pumps: 3 @ 1,750 gpm. each (one is a standby).
Recirculation control gate at wet well; sewage, plus recirculation flow to equal pumping rate.

One primary settling tank:

- Detention period: 1.5 hr. @ 5.0 mgd.
- Overflow rate: 1,300 gpd. per sq. ft. @ 5.0 mgd.
- Dimensions: 70 ft. dia., 11 ft. sidewall depth.

Two trickling filters:

- Dimensions: each, 80 ft. dia., 3 ft. filtering medium (slag) depth.
- Slag volume: 1,115 cu. yd. total.
- BOD removal: 2.0 lb. per cu. yd. per day @ raw BOD of 150 to 300 p.p.m.
- Distributor capacity: 1,750 gpm. each.
- Filter Area: 0.23 acres.

One final settling tank:

- Dimensions: 80 ft. dia., 9 ft. sidewall depth.
- Detention period: 1.5 hr. @ 5.0 mgd. overflow.
- Overflow rate: 1,000 gpd. per sq. ft. @ 5.0 mgd. overflow.
- Recirculation: By underflow with regulating valve.

Two sludge digesters (floating covers and heat exchangers):

- Dimensions: 45-ft. dia., 23 ft. 6 in. sidewall depth, 3 ft. 6 in. hopper depth, each.
- Capacity: 70,000 cu. ft. total @ 3.5 cu. ft. per capita.

Sludge beds (with glass enclosures):

- Dimensions: 8 beds, each 108 ft. by 19 ft. 9 in.
- Area: 17,120 sq. ft. @ 0.85 sq. ft. per capita.

Chlorination: Facilities for pre- and post-chlorination designed for but not constructed because of limited funds available.

TABLE OF TYPES AND MAKES OF EQUIPMENT

Raw-sewage flow-regulating gate: Brown and Brown.
Grit collector, washer and elevator: Walker Equipment Co.
Flow meter register (indicating, recording and totalizing): Bailey Meter Co. (Venturi flume)
Comminutor: Chicago Pump Co.
Sewage pumps (vertical, centrifugal): Buffalo Pump Co.
Sludge collectors in primary and final tank: Walker Equipment Co.
Revolving distributors (trickling filters): Dorr Co.
Sludge digester equipment, including floating covers, heat exchangers, supernatant selector and miscellaneous heating and control equipment: Pacific Flush Tank Co.
Two sludge pumps (duplex plunger type): Ralph B. Carter Co.
Glass covers for sludge beds: Lord and Burnham.
Laboratory furniture and equipment: Kauffman & Lattimer Co.

Getting Better Chimneys

Tests initiated by the Housing and Home Financing Agency have led to good-practice recommendations for chimney installations. As reported in HHFA Tech. Paper No. 13, "Performance of Masonry Chimneys for Houses," these include:

1. Test procedure and criteria should be established to determine the degree of protection that chimneys should provide.

2. In the development of improvements in chimney construction, consideration should be given to the effect of chimney performance on heating equipment design.

3. Minimum areas now specified in building codes should be deleted and the size of flues required should be specified on the basis of flue-gas volume.

4. The present design practice of continuing the flue below the breeching should be abandoned. The 90-deg. turn between the breeching and the vertical flue should be streamlined by the use of an elbow or similar means.

5. Investigations should be made of the degree of improvement in performance and safety that insulation placed between the flue and the surrounding masonry construction will provide. These investigations should include the effect of the increased temperature to which the lining itself will be exposed as the amount of insulation is increased.

6. An appropriate means of introducing room temperature air into the breeching should be required on all breechings to which housheating equipment is attached.

7. Contacts between combustible construction and masonry of a chimney should be prohibited.

Tech. Paper No. 13, authored by R. K. Thulman, may be obtained from HHFA, Division of Standardized Building Codes and Materials, Washington 25, D. C.

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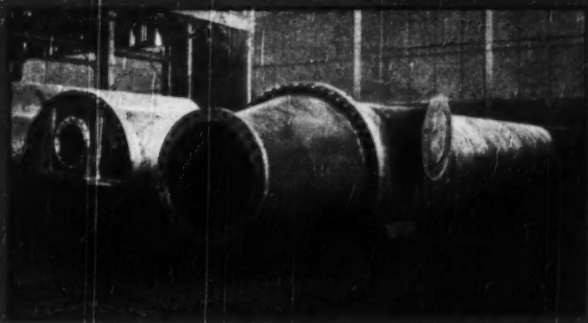
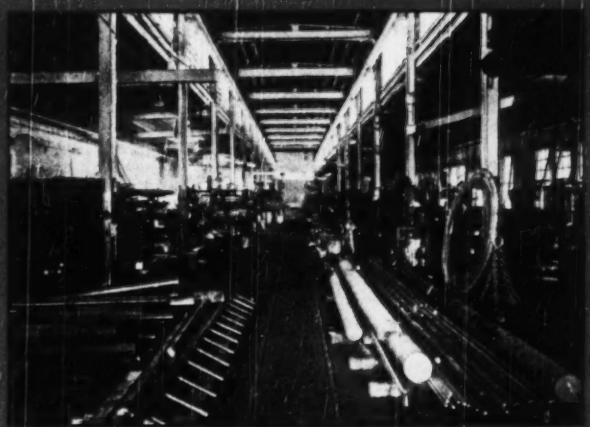


Headers for water intake lines, fabricated throughout in the Posey shops. Size: 72" O. D.



View of section of Posey's fully equipped machine shop.

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BOOK REVIEWS

Building Design Handbook

APPLIED STRUCTURAL DESIGN — By Thomas H. McKaig. 505 pp. Published by author, 881 Main St., Buffalo 3, N. Y. $10 bound, $9.50 punched for 3-ring, 8½x11-in. binder. 10 percent discount on 10 or more copies.

Here in one book are the formulas, tables and typical computations needed for the design of buildings, whether of concrete, steel or wood. Although it had its inception in a series of notes for preparing engineers and architects for state license examinations, the book is intended primarily for use as a handbook by practicing architects and engineers on the assumption that users will have a knowledge of elementary structural theory.

Methods are based, in general, on the author's 35 years of practical experience. He recommends shortcut methods, not merely as timesavers, but as a means of eliminating errors. Design procedures are based on code regulations of various authorities, such as the American Institute of Steel Construction and the American Concrete Institute.

Two New Surveying Texts

ROUTE SURVEYS—By Russell R. Skelton. 531 pp. McGraw-Hill Book Co., New York 18, Toronto, London. $4.50.

This is a first edition that manages to transcend somewhat the traditional curves and earthwork textbook mold. The innovation can be laid to Professor Skelton's appreciation of photogrammetry in the contemporary route-planning picture.

Stress also is placed on the so-called engineering approach, and on the economics of location—both factors that give life to a subject that can become an apparently unrelated series of classroom and field exercises in mathematics. This is not to imply that the text is deficient in mathematics. The derivations essential to proper understanding are there with ample explanation. Explanations are particularly useful where they pertain to approximations and the limitations of those approximations.

Forty-five tables occupy 291 pages of the book. Notable among these is a series of facing-page pairs of tables that give: (1) functions for highway spirals and; (2) deflection angles for the A.R.E.A. spiral. These paired tables cover lengths of spiral varying in 50 ft. increments from 150 ft. to 350 ft., and varying in 100-ft. increments from 400 ft. to 600 ft.

ADVANCED SURVEYING AND MAPPING—by George D. Whitmore. 619 pp. International Textbook Co., Scranton, Pa. $6.50.

As chief of technical staff, topographic division, U. S. Geological Survey, Mr. Whitmore is in an excellent position to know what advanced-surveying students should be taught. Judging from his new book, those students should have a solid foundation in geodesy and they should have a working acquaintance with photogrammetry. A principle objective of this training would be competence in city surveys, a field of growing importance for integrated control and topographic operations.

This book presents the science of geodesy as thoroughly as do the U.S.C. & G. S. manuals (and more understandably); it falls short of the full-fledged geodesy textbook only in the omission of such subjects as computing the earth's figure, and of the derivations of geodetic formulas. The latter, Mr. Whitmore contends, may be omitted because a surveyor need not bother to assure himself of the correctness of formulas or procedures; he needs to perform the operation correctly.

The principle concepts of photogrammetry are detailed in orderly fashion, and practices are described, with due attention to limitations.

Chapters on control surveys and basic maps for cities are augmented by chapters on map projection and compilation, and map finishing and reproduction.

Handling Radioactive Wastes

HANDLING RADIOACTIVE WASTES IN THE ATOMIC ENERGY PROGRAM—An Atomic Energy Commission Report. Obtainable from the Superintendent of Documents, Government Printing Office, Washington, D. C. 25c.

This non-technical report describes radioactivity and its biological effects, types and sources of radioactive wastes in the atomic energy program, and methods for safe handling of wastes and for protecting workers and the public from radioactive contamination.

It gives details about the extensive research program currently supported by the AEC to improve waste handling and storage methods.

The report points out that gaseous, liquid and solid wastes appear at each of the various radioactive or "hot" steps in atomic energy processes and that methods of safe handling used to date have successfully protected workers and the public.

Miscellaneous Notes on Booklets and Reprints

AN ADDED FEATURE of the 1950 edition of Solar Ephemeris (Keuffel and Esser Co., Hoboken, N. J.) is the inclusion of navigational data on eighteen stars other than Polaris. Prof. Philip Kissam, of Princeton University, has written instructions for making bearing, latitude and longitude computations based on observations on the eighteen stars. He also tells how to recognize the stars.

A MANUAL on the use of the electronic microscope in testing materials can now be obtained from the Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C., for $1.25 (checks payable to Treasurer of the United States). The manual is a basic introduction to the nature of electronic microscopes, which can reveal visually the size, distribution and shape of particles in the submicroscopic region (less than 1/100,000 of an inch).

COPIES OF THE PROCEEDINGS of the Second International Conference on Soil Mechanics and Foundations, which formerly could only be obtained from the secretary's office in Holland (ENR Feb. 3, 1949, p. 79), can now be obtained in this country. Also, because of devaluation of European currencies, the price in dollars has gone down. The six volumes, all in English, can be obtained from Donald W. Taylor, Room 1-330 Massachusetts Institute of Technology, Cambridge 39, Mass., for $21. Remittances should be made payable to "Dept. of Civil and Sanitary Engineering, M.I.T." A seventh volume, containing papers received too late for inclusion with the initial six-volume printing, will be available soon. The price for it is $4.

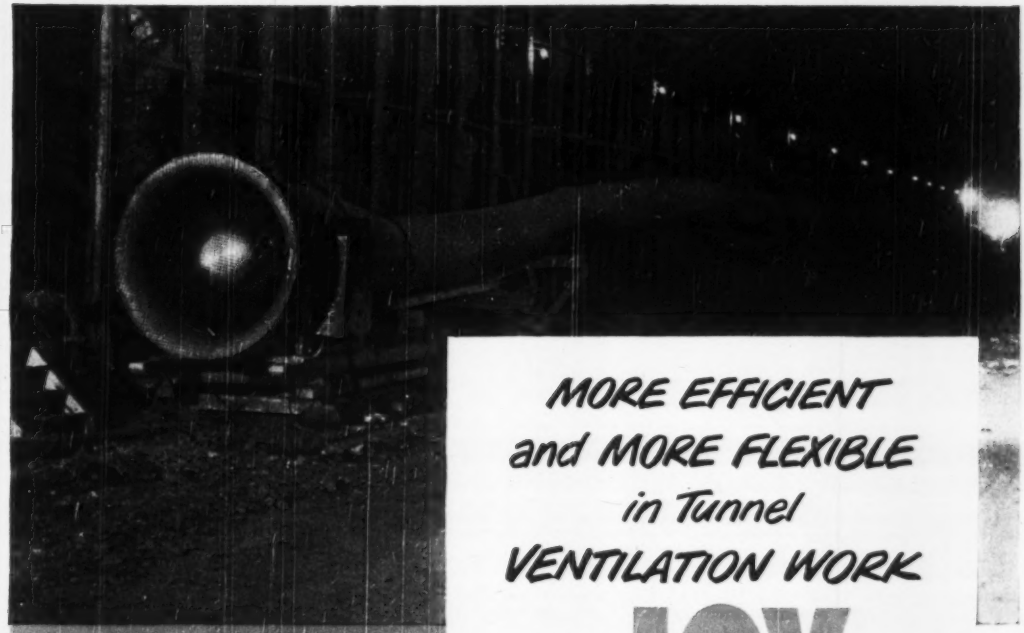
New Engineering Books

ENGINEERS' DICTIONARY — SPANISH-ENGLISH AND ENGLISH-SPANISH — Second Edition. By Louis A. Robb. 664 pp. John Wiley & Sons, New York 16; Chapman & Hall, London. $12.50.

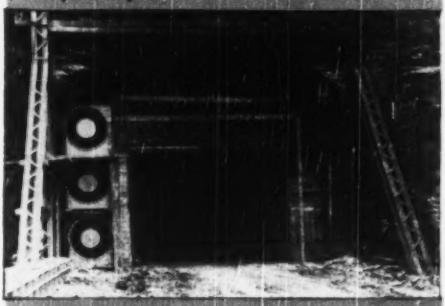
HEATING, VENTILATING, AND AIR-CONDITIONING FUNDAMENTALS—Second Edition. By William H. Severns and Julian R. Fellows. 666 pp. John Wiley & Sons, New York 16; Chapman & Hall, London. $6.50.

PUMP QUESTIONS AND ANSWERS—By Roy Carter, Igor J. Karassik, Elliott F. Wright. 346 pp. McGraw-Hill Book Co., New York 18, and London. $5.00.

PRINCIPLES OF AERODYNAMICS—By James H. Dwinnell. 391 pp. McGraw-Hill Book Co., New York 18, and London. $5.50.



In this tunnel job, a JOY AXIVANE Fan blows air to the face through lengths of flexible Spiratube.



Typical exhaust set-up—three JOY AXIVANE Fans mounted in the entrance of one of twin bores.

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MUNICIPAL AFFAIRS

Sewerage Financing

Youngstown, Ohio—Although financing problems have not been settled, the Youngstown city council has an application to the federal government for an interest-free loan to finance complete planning of the city's proposed $10,000,000 disposal project.

Mayor Charles P. Henderson had previously vetoed a council resolution requiring the city to deal exclusively with two bond firms in selling bonds to pay for the system. An 18-member citizens' committee had earlier recommended that the project be financed on a "pay-as-you-go" basis with sewer rental charges at the beginning for planning and preliminary studies and for paying off bonds issued later to finance actual construction of the plant and intercepting sewer system.

Under the resolution vetoed by the mayor, planning and engineering work also would have been financed by sale of bonds. A general plan for the sewage treatment plant and intercepting sewer system was prepared three years ago by Jones & Henry, Toledo, consulting engineers, whose estimate of the cost at that time was $6,836,700.

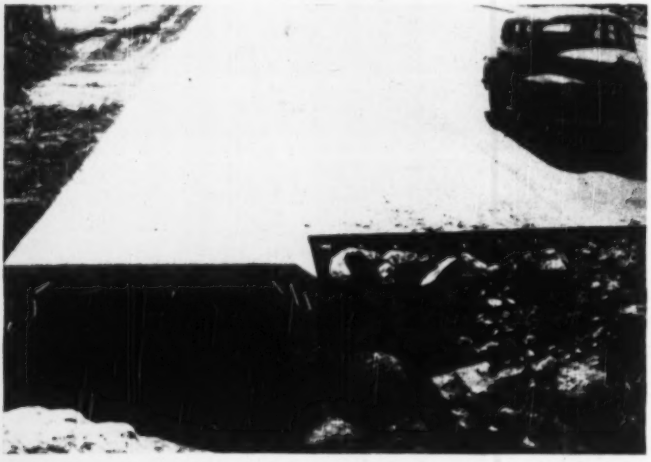
Indianapolis, Ind.—The board of public works has voted to issue $900,000 in bonds to finance partly a $1,100,000 storm sewer project to serve the East 34th Street area, now served only by sanitary sewers. Construction will begin in early spring.

The Board of Public Works also voted to seek a federal loan of probably $150,000 to finance plans and designs for four other proposed sewer projects, whose cost will be about $2,000,000. These are the E. 10th St. and Ritter Av. sewer, the W. 12th St. and W. 14th St. sewer, the Boyd Av. sewer, and 32d St. and Washington Blvd. sewer.

Sewer construction has been delayed pending outcome of a test suit on the bonding powers of sanitary districts. Mayor Al Feeney said that, in event of an unfavorable court decision, the plans for the four projects could be held up.

Cleveland, Ohio—The city council has approved an ordinance boosting the Cleveland sewer rental charge from the present 18 cents per thousand cu. ft. of water to 25 cents. This action, which it is estimated will cost the average householder only 84 cents additional per year, opens the way for expansion of the southerly sewage disposal plant at a cost of $9,000,000, and creation of a $2,400,000 low level sewer system to serve the industrial Cuyahoga Valley and thus eliminate much of the pollution which has resulted from industrial wastes.

Buffalo, N. Y.—An $830,716 construction bond fund budget for the first six months of 1950 has been submitted to the Buffalo, N. Y., Sewer Authority by General Manager Frederick W. Crane. It provides for construction of new storm water drains, reconstruction of two incinerators, replacement of water lines in connection with the new water supply system and other projects.



DOUBLE PURPOSE RIGHT-OF-WAY—West Virginia Road Commission has put a road and a drainage structure on its right-of-way around Beckley, W. Va. The road is of reinforced concrete, 40 ft. wide. The drainage structure, 4 ft. by 6 ft. in size, runs beside the highway for half a mile. Its top has been finished as a sidewalk.

How to make reservations for slum clearance work

Communities are being informed that the federal government is ready for the first steps in the program of slum clearance and urban redevelopment. Congress has already authorized $500,000,000 in capital grants and a billion dollars in loans.

The receipt of the initial reservation requests will be followed shortly by the issuance of application forms and detailed regulations governing federal financial assistance for specific slum clearance projects.

Nathaniel S. Keith, director of the slum clearance and urban redevelopment division of the Housing and Home Finance Agency, says that his division has already received reports that 175 cities in 40 states intend to participate in the program. Almost a third of them are in the small city class of 25,000 to 40,000 population.

The grant reservations when made will be for projects which communities expect to initiate by July 1, 1951. Reservations will lapse after six months if communities have not filed applications for financial aid on specific programs, or taken other positive steps. Communities initiating projects later than July 1, 1951, will be able later to seek allocations from the $300,000,000 remaining in the capital grant fund.

Waterfront development proposed at Jacksonville

A St. Johns River waterfront development for Jacksonville, Fla., has been proposed by the Florida State Improvement Commission.

It is asserted that a four-wing, interconnected structure could be erected on the waterfront which not only would provide adequate space for city and county offices, each in distinct wings, but would produce revenue by rental of the other wings to the many federal and state agencies now occupying private business offices in that area.

It seemed the consensus of officials that an early coordination of the separate plans being advanced by the city and Duval County for off-street parking areas and new municipal and county buildings must be achieved before any further progress can be made in the development.

these 12 square inches can mean a vital difference of 20 cubic feet

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GUARANTEED TO HOLD, MIX AND AGITATE ITS RATED CAPACITIES AND CERTIFIED TO COMPLY WITH TRUCK MIXER MANUFACTURERS BUREAU STANDARDS AS APPROVED BY N.R.M.C.A.
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Concrete authorities have accurately determined the proportions of such *free mixing space* needed in truck mixers and agitators to insure high strength, quality concrete.

Your eye cannot detect that a machine which claims 3 cubic yards capacity as a truck mixer actually has 20 cubic feet less than the minimum requirement for good mixing—***but it can always see that such a non-standard truck mixer never bears this rating plate.***

Look for this rating plate on the truck mixers that supply your jobs. It guarantees that the supplier is maintaining these quality standards on which the $250,000,000 ready-mixed concrete industry has been built.

The Bureau rating plate is available to any manufacturer who meets its quality standards and requirements

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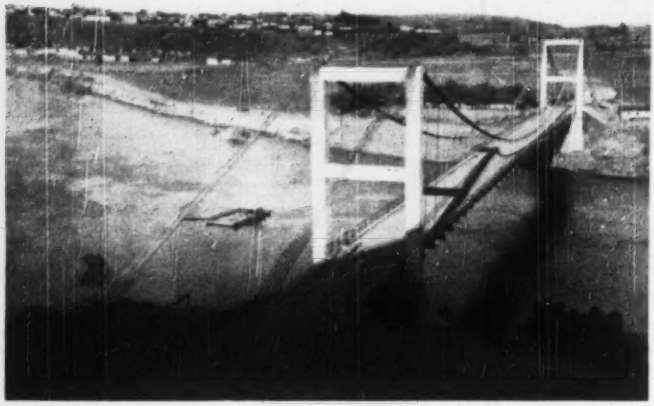
DEVELOPMENTS ABROAD



LONG BRIDGE FOR CHILE—What is described as the longest bridge in Chile (main span, 445 ft.) has been completed over the Imperial River in the southern part of the country. Its towers are of concrete, 66 ft. high, and its cables each consist of five 2¼ in. wire ropes. Stiffening trusses and floor system are steel but the 20-ft. roadway is timber. Total design load was about 1,200 lb. per lineal foot. This is said to be the first of a series of four or five modern bridges to be built by the Ministry of Public Works, all to be begun this year.

American Engineering Firms in Asia

A recent Maritime Commission hearing at San Francisco (on subsidy requests by two West Coast freight steamship lines) brought out some interesting testimony by D. J. Bleifuss, vice-president and chief engineer of International Engineering Co., Inc., and of Morrison-Knudsen International Co., Inc.

Mr. Bleifuss' statement gives a picture of the activities abroad of a leading American engineering and construction concerns, especially in Asia and Asia Minor.

Collating and consolidating the testimony of Mr. Bleifuss, the picture that emerges regarding the work in Asiatic countries is something like this:

India—International Engineering Co., Inc. has investigated various dam sites in India, and has designed several very large dams there.

Ceylon—International is building a large earth dam in Ceylon.

Korea—At the request of the Economic Cooperation Administration these interests recently have investigated the Sumjin Gang hydroelectric and irrigation project in Korea, and have studied certain railroad projects. The river work is estimated at about $16,000,000, and the railroad work about $15,000,000.

Afghanistan—International is designing a dam for Afghanistan, has organized Morrison-Knudsen Afghanistan, Inc., and is engaged in construction operations there now.

Turkey—The company has sent men to Turkey to investigate various projects, and has designed and is designing dams for that country.

Iran—It has conducted an engineering mission in Iran.

Philippines—In 1947 MK participated in an engineering mission to the Philippines, which reported on various sites for hydro-electric and other projects. The islands are now proceeding with river projects to the value of about $30,000,000.

Guam—Morrison-Knudsen, with another company, has carried out large operations in Guam, and other work is coming up which will call for millions of dollars.

China—Morrison-Knudsen has investigated the need for major construction projects in China. Besides reporting on railroads and ports it organized a consulting board of three prominent engineers who spent two months traveling up and down the Yellow River Valley, and then prepared recommendations for control of that river.

It started foundation investigation for a large dam in the Yangtze Gorge, which was stopped when the Chinese government ran short of money. That dam would cost about a billion dollars. The Yellow River bridge, designed by International, would cost about $10,000,000, railroad work reported on would cost about $290,000,000 and harbor work about $88,000,000.

Besides its mission to China, MK has handled very large shipping operations for the Chinese government. It also bought and shipped about 50 second-hand railway passenger cars to the city of Shanghai for the Chinese government.

Housing

Western Europe—New small-scale housing units, built with Marshall Plan aid, are beginning to replace war-shattered dwellings throughout Western Europe. The job of providing shelter for thousands of homeless families is being undertaken with the help of counterpart funds, American machinery and ECA-financed building materials.

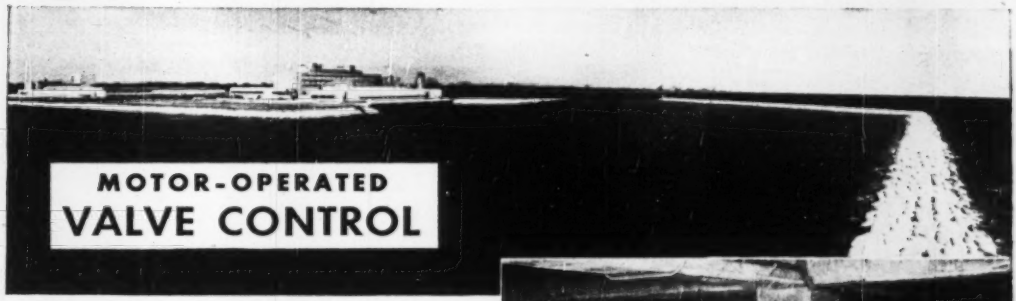
To date Economic Cooperation Administration has approved the release of more than $100,000,000 in counterpart funds for housing in the participating countries. In addition, part of the building materials for these dwellings comes from $93,300,000 worth of lumber and $446,000,000 worth of non-ferrous metals which ECA has authorized for European recovery since the beginning of the program.

As a result of this aid, pre-fabricated houses are springing up in the Netherlands, workers' homes are being constructed in certain major industrial areas in France, and thousands of Greek refugees are finding shelter in newly-built villages. Housing programs also are taking shape in Italy, Austria, Norway and the United Kingdom. Most of the current housing programs are geared to industrial development of individual countries.

In France, for example, a lack of housing has been a serious problem in recruitment of coal mining labor. Today, the equivalent of more than $14,000,000 in counterpart funds is financing approximately 3,000 housing units in the Lorraine, Nord and Pas-de-Calais mining regions.

India—Willie Messerschmitt, German war plane maker, is now in the low-cost housing field. He has been retained in a consultant's capacity by the Indian government. His advice will be sought on several plans the government has for prefabricated houses, and he will tour the country to study the requirements in different sections.

and now-a PORTABLE *Limitorque*



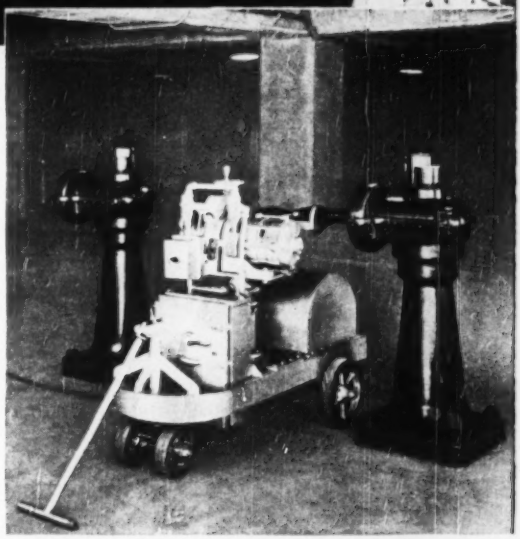
MOTOR-OPERATED
VALVE CONTROL

. . . at South District Filtration Plant, City of CHICAGO

Something new . . . here's the well-known and widely used *"Limitorque"* Motorized Valve Operator, in *Portable form*, adapted for use wherever a hand-drawn truck can be wheeled to a Valve or Sluice Gate location. — It may be quickly connected to a power outlet . . . and automatic *electric opening and closing is readily secured.*

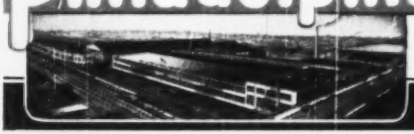
This portable "Limitorque" is equipped with the famous *torque-limiting feature* (which operates in both Opening and Closing directions); *The limit switch* which may be set for any desired travel (automatic re-setting); *A Universal Joint connection* is also provided for compensation of misalignment between floorstand and power unit.

This unique method of electrical valve operation is *another first* for Philadelphia Gear Works. It embodies the salient and proven features that have made *Philadelphia "Limitorque" Valve Operators,* the most widely used in the world.



The *Portable "Limitorque"* shown directly above was built to the exacting specifications of the Filtration Division Engineers, City of Chicago, Ill. The photo at the top of the page shows a general view of the Filtration Plant taken from South Breakwater Light. (All photos courtesy of South District Filtration Plant at Chicago, Ill.).

Send for 96 page "Limitorque" Catalog and please use your Business Letterhead when requesting same.



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DIFFERENTIAL-ACTING
PILE HAMMERS
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• Put your pile driving money on Super-Vulcan. It'll pay off. For this powerful pile hammer will give you a long lifetime of easy, efficient economical operation. It's dependable, durable, simple in design . . . built to meet the requirements of experienced contractors for super speed on reduced steam.

It fits the same leads, uses the same accessories, as Warrington-Vulcan Single-Acting Pile Hammers.

Write for complete details on the job-tested Super-Vulcan—built by the largest exclusive manufacturer of pile driving and extracting machinery.

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meet all needs

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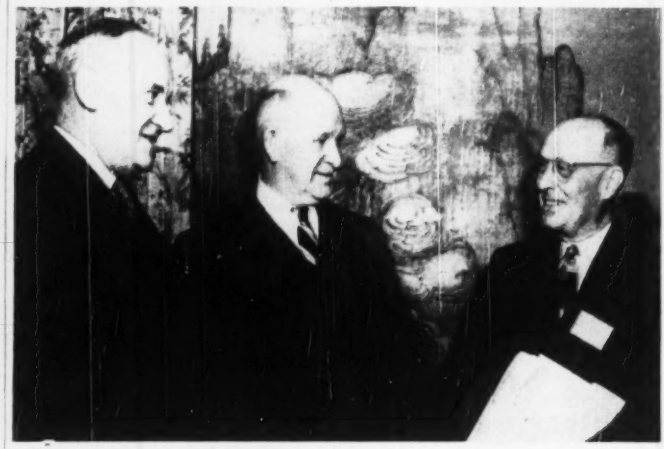


Hugh M. Hughes, center, president of the H. M. Hughes Co., Inc., general contractors of New York City, has been elected president of the Building Industry Employers of New York State. Congratulating him are George S. Hallenbeck, right, of Buffalo, the outgoing president, and Peter W. Eller, chairman of the board of governors of the Building Trades Employers' Association of New York City.

James W. Follin, assistant administrator of the Federal Works Agency when it was taken over by General Service Administrator has become special assistant to the administrator to devote his efforts largely to the planning and public works programs of GSA.

J. J. Rauch, city manager of Greenwood, S. C., for the last two and one-half years, has resigned effective Jan. 1.

Walter Blume, assistant city engineer at Albuquerque, N. M., has been appointed city building supervisor, filling a vacancy left by the death of Herbert W. Rankin.

Harold J. Voloun, Mentor Headlands, Ohio, has been appointed sanitary engineer of Lake County, succeeding Paul D. Cook, who held the post 21 years but resigned to become city manager at Painesville.

Oswald J. Muegge, a civil engineer graduate of University of Wisconsin in 1923 and who studied sanitary engineering at Harvard, was appointed state sanitary engineer of Wisconsin, succeeding L. F. Warrick who has taken a post with the United States Public Health Service.

Samuel P. Longstreet, a former district engineer for the Pennsylvania State Highway Department at Uniontown, Pa., has been named chief engineer for the Pennsylvania Highway and Bridge Authority.

Charles A. Marr will take up the civil engineering duties in the water, light and power department at Springfield, Ill., succeeding **Fred Tyrrant** who has gone with the Sangamon County highway department.

William Brewster, who had retired in June, 1948, as West Virginia district engineer of the Public Roads Administration after 29 years of service, has been employed by the State Road Commission of West Virginia as a special consulting engineer, with headquarters in Charleston.

L. M. Lovejoy of Frankfort, Kansas, is now back with the Kansas Highway Commission after eight years with the U. S. Engineers in the Canal Zone. He previously worked 14 years with the Kansas commission and is now resident engineer at Frankfort working on a bridge over the Blue River.

Ralph F. Rhodes, as head engineer and technical advisor of the Savannah, Ga., district, Corps of Engineers, is retiring after more than 40 years of continuous service. However, he will continue to work on a contract basis as a consultant for the Engineers and for the Tidal Hydraulics Committee, a national organization of exports which supervises all studies of tidal hydraulics made by the Engineers.

Maj. Gen. Hugh J. Casey, who last Dec. 1 took over as chief of the Ohio River Division, U.S. Engineers, at Cincinnati, has announced his retirement from the Army. He succeeded Maj. Gen. J. C. Mehaffey as chief of the Ohio River Division, when Mehaffey retired recently.

A. L. Spencer has just been appointed executive vice-president of the S. N. Nielsen Co., Chicago general contractors. With the company since 1941, he has had charge of constructing Chicago's South Side filtration plant, several industrial plants and housing projects.

David LeRoy Mantle, a civil engineer, has organized David LeRoy Mantle and Associates, engineers and consultants at Texarkana, Tex.-Ark., to specialize in municipal engineering, parks, airfields, recreation projects, dams, and steel and reinforced concrete structures.

E. A. Bailey, a Region II Bureau of Reclamation engineer, has retired. Upon graduation from the University of California in 1903, he went with government engineering projects. He has served with the Corps of Engineers in Texas and Virginia and with the Tennessee Valley Authority, in addition to about 20 years with the bureau. In 1941 he was assigned to the bureau office in Sacramento and at retirement was at the Chico, Calif., office.

Justly proud of their safety record—only one lost-time accident in 156,200 man-hours of work—on the new Lincoln Electric Co. plant in Euclid, Ohio, are Henry Angelberger, at left, project superintendent for the Austin Company, designers and builders of the $8,500,000 plant, and H. A. Burnip, project engineer for Lincoln Electric Co. The safety sign reads, "The Austin Company wants every man on this job to work safely for his own sake."

Donald E. McLean, of Sac City, county engineer of Sac County, Iowa, becomes assistant secretary of the Associated General Contractors of Iowa. He will move to Des Moines and have his offices with O. W. Crowley, the executive secretary. He is the son of J. C. McLean, Sioux City, Woodbury County engineer, and has been Sac County engineer for the last 18 months. After service in the Navy he obtained his civil engineering degree from the University of Michigan.

I. Alvin Pasarew, the director of the Maryland State Planning Commission, has been named chairman of the Public Works Planning Committee of the Association of State Planning and Development Agencies. The aim of the committee is to consider methods, legislation and accomplishments in state and local public works coordination and planning, and to develop techniques for encouraging local public works budgeting both with and without outside funds.

James C. McGivern, who is dean of the school of engineering at Gonzaga University, Spokane, Wash., has been appointed to the Washington State Board of Registration for Professional Engineers and Land Surveyors.

Henry E. Birge, formerly was office engineer with the Spokane County engineering department at Spokane, Wash., has been appointed Garfield County engineer at Pomeroy, Wash. He had been with Spokane County for five years, previously having been with the Washington Water Power Co.

George F. Hervest, a graduate of the University of Nebraska, is now city engineer of Fairbury, Neb., replacing **Obed De Boes**, resigned.

John C. King has been transferred from Toronto, Ont., to Moncton, N. B., by the Canadian National Railways engineering department to be bridge engineer for the Atlantic region. He was graduated from the university of British Columbia in 1939, and was on surveys of the Alaskan Highway, construction of air bases in Alberta and Saskatchewan and of a synthetic rubber plant at Sarnia, Ont., before joining the C.N.R. engineering staff in 1944.

John L. McRae has joined the staff of Soil Testing Services, Inc., of Chicago, Ill., as research and testing engineer. Formerly he was with the Army Engineers Waterways Experiment Station in Vicksburg, Miss., and more recently with the soil mechanics department of Northwestern University.

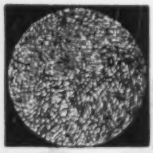
The following assistant resident engineer appointments have been announced by the Virginia highway department: **W. C. LaBaugh**, assistant resident engineer for Rockbridge, Alleghany and Bath counties, replacing the late G. H. Gill; **S. E. Blystone**, assistant resident engineer for Appomattox and Campbell counties, filling a new post; **R. N. Harrell**, assistant resident engineer for Wise and Dickenson counties, replacing A. G. Williams, resigned.

Maurice Dean of Halifax, N. S., has been named engineer of the Starr Manufacturing Co., Dartmouth, N. S. He is a civil engineering graduate of the Nova Scotia Technical College, and was in the Canadian Engineers for four years of the second world war.

Francis F. Escoffier, a hydraulic engineer in the Mobile, Ala., district office of the Corps of Engineers, has received a Department of the Army award for superior accomplishment. He developed a new graphical method to compute backwater profiles.

Wilbur C. Anderson was recently elected city engineer for Las Vegas, Nev., succeeding Howard Greer, resigned. He is a graduate of Cornell University.

Lt. Col. Harold F. Dyer, executive officer of the Tulsa, Okla., district, Corps of Engineers, has been assigned overseas and leaves soon to join the American Mission for Aid to Turkey at Ankara. A graduate of Montana State College, he went overseas in 1944 as commanding officer of the 135th Engineer Combat Battalion under the Third Army. He returned to the U. S. in 1947 and was assigned to the Tulsa district.



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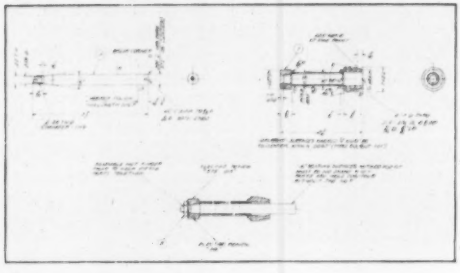

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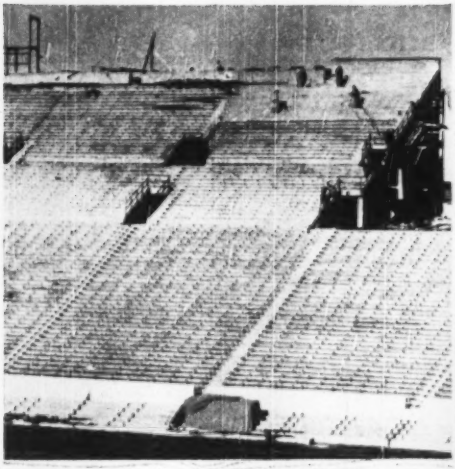
AMERICA'S STANDARD FOR OVER 25 YEARS

Col. Clark Kittrell, who for the last four years has been division engineer, Upper Mississippi Valley Division of The Corps of Engineers at St. Louis, Mo., announced upon his recent retirement from active duty after more than 32 years of commissioned service that he will become associated with Pioneer Contracting Co. Inc., as executive vice-president. This company has offices in Memphis and in Dyersburg, Tenn. and is active in highway, drainage, airport, levee and dam construction. Colonel Kittrell is a graduate of West Point, and holds a B.S. degree in civil engineering from Massachusetts Institute of Technology. His active service included more than 20 years on construction work of varied nature.

Lt. Col. Fenner H. Whitley, of St. Petersburg, Fla., has been assigned to the Eighth Army Medical Section in Japan as sanitary engineer. His duties will be to inspect water supply facilities and recommend changes and improvements for unrestricted use for drinking purposes. A former sanitary engineering instructor at New York University, Colonel Whitley entered the Army in 1941. During World War II he served with the Military Government, Berlin, as consultant to German public health officials there. Prior to his arrival in the FEC, Colonel Whitley was sanitary engineer at First Army Headquarters.—(U. S. Army Photo)



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Penta, always chemically uniform, is a *long-lasting* preservative. It does not weather away nor evaporate. Actually, tests indicate the longer penta is in wood, the deeper it penetrates . . . the more effective it becomes

You may never build a football stadium, but the qualities that make Monsanto Penta preferred in that application will deliver *superior protection* wherever you use wood. For technical information and names of suppliers of treated wood or penta solutions, mail the coupon, contact the nearest Monsanto Sales Office or write: MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1759-A South Second Street, St. Louis 4, Missouri.

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Columbus 16, Ohio

Elections and Activities

The Chesapeake section, American Water Works Association, which includes water officials from Washington, D. C., Maryland and Delaware, recently elected Clarke Gardner, city engineer and superintendent of the water department of Salisbury, Md., as chairman. D. C. Superintendent Ault was elected vice-chairman, while Carl J. Lauter, chemical engineer for the Washington Aqueduct System, Corps of Engineers, was named secretary-treasurer. Trustees elected were R. C. Willson, water department superintendent of Hagerstown, Md.; W. Compton Wills, water department manager, Wilmington, Del.; W. J. Edwards, city councilman and water commissioner, Cumberland, Md., and J. S. Strohmeyer, deputy water engineer, Baltimore.

S. K. Keller, of Clearwater, has been elected chairman of the Florida State Water Works Association. Others elected included S. W. Wells, State Board of Health, Jacksonville, vice-chairman; A. E. Williamson, Jr., Daytona Beach, re-elected secretary. At the meeting held in Orlando, A. P. Black, president of the American Water Works Association, announced that W. A. Glass of Miami's water and sewer department, was winner of the annual Fuller Award for service to the water works industry. Delegates were told by John S. Telfair, Jr., sanitary engineer for the State Board of Health, that Florida communities now need new water works systems and expansions totaling $38,000,000.

Marshall Tilden, Riverside, Calif., has been elected president of the Building Contractors Association of California, Inc. He succeeds George Streit, Pomona. Other new officers: William Barnes, Los Angeles, first vice-president; C. J. Miller, Sherman Oaks, second vice-president; Howard Nichols, Bakersfield, secretary; and Harry Hanson, Los Angeles, treasurer.

Thomas Ingledow, vice-president and chief engineer, B. C. Electric Railway Co., Vancouver, B. C., has recently been elected president of the British Columbia Association of Professional Engineers.

Arthur W. Anderson, Oakland, Calif., consulting engineer, has been named president of the Structural Engineers Association of Northern California, Inc., for 1950. He succeeds Jesse Rosenwald, San Francisco structural engineer. The new vice president is John E. Rinne, structural engineer with Standard Oil Co. of California. Other San Francisco engineers elected at the recent meeting were: secretary—W. W. Brewer, junior partner, Dames and Moore, foundation engineers; treasurer—Franklin P. Ulrich, chief of Seismological Field Survey, U. S. Coast and Geodetic Survey; directors—Howard A. Schirmer, contracting manager, fabricated steel construction division, Bethlehem Pacific Coast Steel Corp.; and Walter L. Dickey, power division, Bechtel Corp.

MAJOR MEETINGS

National Sand & Gravel Association, convention and exhibit, Stevens Hotel, Chicago, Ill., Jan. 22-27.

National Ready Mixed Concrete Association, convention and exhibit, Stevens Hotel, Chicago, Ill., Jan. 22-27.

Conference on Polluted Irrigation Water, Auspices Environmental Health Study Section, Public Health Service; El Paso Health Dept., and Texas State Health Dept., El Paso, Tex., Jan. 27.

National Crushed Stone Association, convention and exhibit, Stevens Hotel, Chicago, Ill., Jan. 29-Feb. 2.

Midwest Materials Handling Conference, Technology Center, Illinois Institute of Technology, Chicago, Ill., Jan. 30-Feb. 1.

Association of Asphalt Paving Technologists, annual business meeting, Statler Hotel, St. Louis, Mo., Feb. 6-7.

National Association of Home Builders, Congress and Stevens Hotels, Chicago, Ill., Feb. 19-23.

American Concrete Institute, annual convention, Edgewater Beach Hotel, Chicago, Ill., Feb. 20-22.

National Council for Stream Improvement, annual meeting, Waldorf-Astoria Hotel, N. Y. City, Feb. 20-22.

Minnesota Federation of Engineering Societies, exposition, Minneapolis Armory, Minneapolis, Minn., Feb. 21-23.

Ontario Road Builders' Association, Royal York Hotel, Toronto, Ont., Feb. 22.

American Concrete Pipe Association, annual convention, Fairmont Hotel, San Francisco, Calif., Feb. 22-25.

Associated General Contractors of America, national convention, San Francisco, Calif., Feb. 27-March 3.

American Road Builders Association, annual meeting, Netherland Plaza Hotel, Cincinnati, Ohio, March 6-9.

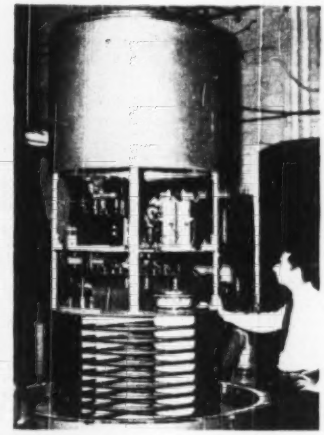
New Jersey Sewage Works Association, annual convention, Hotel Stacy-Trent, Trenton, N. J., March 22-24.

National Plastics Exposition, Navy Pier, Chicago, Ill., March 28-31.

New Jersey Society of Professional Engineers, Essex House, Newark, N. J., April 14-15.

Highway Transportation Congress, Mayflower Hotel, Washington, D. C., April 26-27.

EDUCATION and RESEARCH



DETECTING SMOG COMPONENTS—Irritants in smog at Los Angeles, Calif., are being tagged by a new adaptation of atom-smashing techniques. This 5,000-kw electrostatic Van de Graff generator enables Stanford Research Institute scientists at California Institute of Technology's Kellogg Radiation Laboratory to detect and analyze layers of material no more than one molecule in thickness. Samples are bombarded with a stream of ions, which are scattered in characteristic ways by particles present, permitting analysis by an ion detector. The new technique, worked out by Sylvan Rubin (in picture) and Volney K. Rasmussen, SRI physicists, with C. C. Lauritsen, professor of physics at CalTech, enables submicrochemical analysis of matter as small as one-billionth of an ounce.

New engineering building ready at Tennessee

On March 6 the new $994,000 engineering building of the University of Tennessee, Knoxville, will be dedicated. Replacing a building destroyed by fire in 1942, the new building will be named "Perkins Hall" in honor of the late Charles A. Perkins, who for 49 years was a member of the faculty.

The university's third engineering building, it is of three stories with a basement and sub-basement. It will serve all freshman engineering students, as well as advanced students in civil and industrial engineering. N. W. Dougherty is dean of the college.

Trench-backfill study

At the University of California, Berkeley, research is being made on how to fill up holes in pavements properly and to take bumps out of highways.

The research staff of the university's institute of transportation and traffic engineering is investigating types of soil and methods that make refills firm enough to stop later settling. Soil samples from trenches from various parts of the state are being analyzed.

Educational Notes

Earthquake Resistance—As the result of the serious Pacific Northwest earthquake of April 13 last, the University of Washington is offering the area's first course on construction of earthquake-resistant buildings. The course for graduate or licensed engineers and architects, will cover the special stresses created by earthquake motions and the methods of framing and assembling commercial buildings, residences, elevated tanks, towers and other structures to withstand them.

Pollution Study—The New England Interstate Water Pollution Control Commission has appropriated $3,393 to Rhode Island State College and $3,456 to Wesleyan University for pollution research. In Rhode Island a survey will be made of the textile industry as to plant locations, character and treatment of industrial wastes. Wesleyan will concentrate on collecting data on industrial waste treatment methods found successful in the past, as well as current practice. The two institutions will report jointly to the commission. Joseph C. Knox, formerly secretary of the New England Water Works Association, and lately an associate sanitary engineer in the Massachusetts Department of Public Health, has been appointed secretary of the commission. Headquarters will soon be established at Boston. The board is composed of public health officials from New York, Connecticut, Rhode Island and Massachusetts.

Vast Research Program—According to a survey made by the New York "Times", American colleges and universities are engaged in the most extensive research program in the history of higher education. In the current academic year, the federal government will give 200 institutions more than $100,000,000 for research purposes, and industry will contribute close to $25,000,000. More than one-third of all federal funds for research for the engineering sciences.

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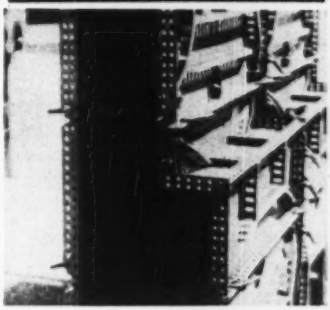

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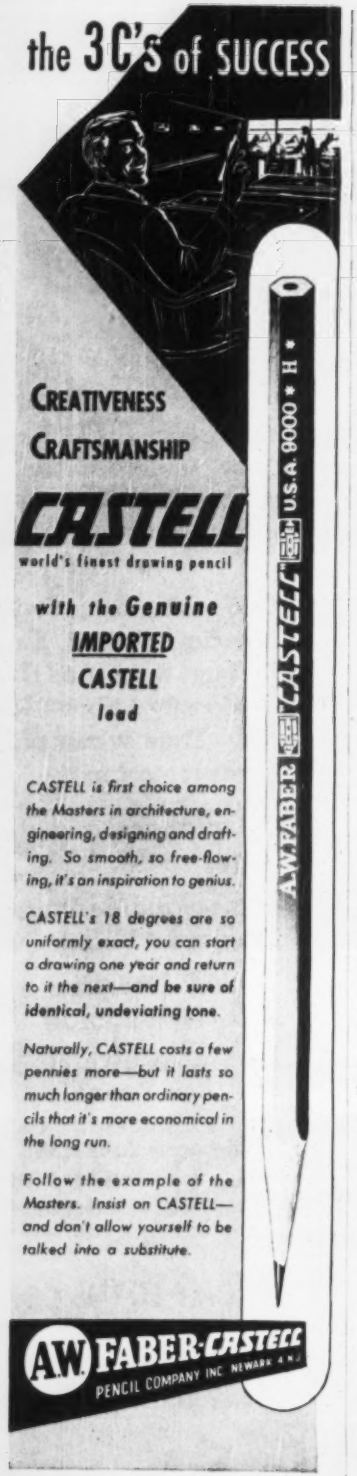
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UNIT PRICES BID BY CONTRACTORS

New Water and Sewer Systems to be Built for Ivy, N. C.

Sixteen contractors went after the Ivy, N. C., water distribution and sewerage system contracts at the bid opening December 12, 1949. Contracts will be awarded on the basis of unit prices bid, but the quantities in the original bids reported here may be revised upward. This of course, will raise the contract amounts above the low bids shown. Quattlebaum Engineering Co., Johnston, S. C. is consulting engineer.

The elevated water tank will have a capacity of 100,000 gal. The Imhoff tank sewage treatment plant capacity is 60,000 gal., to serve a population of 1,000.

Prevailing wages are: carpenters $1.25 per hr., other skilled trades from $1 to $1.50 and laborers $0.60 to $0.75.

Contractor must furnish all materials, tools, apparatus and labor and provide a surety bond in amount of 100 percent of the contract total. Alternate bids were taken on water lines. Bidders included.

WATER DISTRIBUTION – Bid totals

Contractor	Working Days	4" Cast Iron Base Bid	4" Transite Alternate	2" Cast Iron Alternate
W1 Ridlehuber & Co.	90	(1) 46,925.00	(3) 46,925.00	(1) 43,382.00
W2 Knox Bros.	50	(2) 49,415.00	(1) 44,765.00	(4) 46,200.00
W3 J. B. McCrary Co.	120	(3) 49,758.10	(4) 48,744.10	(2) 45,653.00
W4 Kahn & Jackson	120	(4) 49,864.50	(2) 46,279.00	(3) 45,707.00
W16 Peden Construction Co	120	(16) 65,665.00	(16) 64,105.00	(16) 63,275.00

ELEVATED TANK (100,000 gal) – Bid totals

Chicago Bridge & Iron Co.	120 days	$ 20,700.00
Whitmire Tank Co. Inc	120	$ 20,995.00
R. D. Cole Mfg. Co.	150	$ 21,990.00

SEWERAGE SYSTEM AND DISPOSAL PLANT – Bid totals

Contractor	Working Days	Sewers	Imhoff Tank Disposal Plant
S1 C. Y. Thomason	120	(1) $ 40,991.80, low	(4) $ 5,691.00
S2 Ridlehuber & Co.	90	(2) $ 42,083.00	(2) $ 4,750.00
S3 Kahn & Jackson	120	(3) $ 43,255.61	(1) $ 4,581.00, low
S4 Reed & Abee	160	(4) $ 43,625.05	(No Bid)
S13G. E. Moore	120	(13) $ 52,699.35	(11) $ 9,500.00, high
S14 Sloan Constr. Co	100	(14) $ 53,619.73	(7) $ 5,990.00
S15 Suber & Co.	150	(15) $ 56,340.00, high	(10) $ 8,500.00

WATER DISTRIBUTION

Items, Description		Quantity	Unit Prices W1	W2	W3
8" Cast Iron Water Mains*	lf	1,800	2.25	2.40	2.31
6" Cast Iron Water Mains*	lf	14,000	1.60	1.76	1.71
4" Cast Iron Water Mains*♯	lf	7,500	1.25	1.33	1.27
3 Way Hydrants	ea	20	120.00	120.00	122.75
8" Gate Valves	ea	4	75.00	80.00	81.50
6" Gate Valves	ea	12	60.00	55.00	55.75
4" Gate Valves♯	ea	14	40.00	40.00	39.40
8" Check Valves	ea	1	120.00	90.00	78.50
5/8" x 3/4" Water Meters	ea	100	40.00	39.00	45.20
Tunneling Under R. R. or Hi-Way	lf	200	2.00	No price	5.25
Replacing Bituminous Pavement	sy	250	1.00	0.80	1.00
Cast Iron Fittings and Specials	tons	4	250.00	250.00	220.00
Cl. "A" Concr. Tank Fndns (5+bags cmt/cy)	cy	45	30.00	30.00	30.00

*Alternates		Quantity	W2	W4	W1
8" Transite Water Mains	lf	1,800	2.20	2.30	2.25
6" Transite Water Mains	lf	14,000	1.55	1.75	1.60
4" Transite Water Mains	lf	7,500	1.15	1.15	1.25

♯Alternates		Quantity	W1	W3	W4
2" Cast Iron Water Mains	lf	7,500	0.80	0.75	0.77
2" Gate Valves	ea	14	28.00	24.75	29.00

SEWERS		Quantity	S1	S2	S3
8" V.C. Pipe 0 to 6' deep	lf	16,900	0.95	1.00	1.00
6' to 8'	lf	5,028	1.10	1.20	1.18
8' to 10'	lf	1,685	1.30	1.50	1.35
10' to 12'	lf	600	1.65	1.80	1.70
12' to 14'	lf	573	2.20	2.50	2.20
14' to 16'	lf	815	3.20	3.00	2.85
16' to 18'	lf	165	4.50	5.00	3.75
18' to 20'	lf	200	5.50	6.00	5.00
Manholes - - - 0 to 6' deep	ea	50	70.00	70.00	75.00
6' to 8'	ea	13	95.00	90.00	90.00
8' to 10'	ea	4	135.00	120.00	110.00
10' to 12'	ea	1	175.00	150.00	140.00
12' to 14'	ea	2	220.00	190.00	180.00
14' to 16'	ea	1	280.00	200.00	225.00
16' to 18'	ea	1	360.00	220.00	275.00
Drop Manholes Additional	ea	10	20.00	25.00	20.00
8" Cast Iron Pipe Under R. R.	lf	100	10.00	3.00	6.00
8" x 6" V. C. Wyes	ea	100	2.00	2.50	2.00
6" Riser Pipe V. C.	lf	500	0.75	0.75	1.00
6" V. C. House Connections	lf	2,000	0.85	1.00	1.10
Bituminous Resurfacing	sy	...	1.50	1.00	1.50
Cast Iron Pipe on Piers	lf	...	2.75	2.75	3.00
Cl. "A" Concr. Piers & Headwalls (5+bags cmt/cy)	cy	...	45.00	45.00	40.00
Bar Reinforcing in Headwalls	lbs	...	0.15	0.10	0.125
Flash Gate (Installed)	ea	...	60.00	30.00	40.00
Rock Excavation	cy	...	8.00	5.00	12.00

OBITUARY

Arthur S. Whitbeck, 69, civil engineer, who was active in the building of stretches of the N. Y. State Barge Canal, died Jan. 4 in Rochester, N. Y. A 1903 graduate of the college of engineering, Cornell, he was an engineering consultant to the Rochester Gas & Electric Corp. in the construction of the Canada Dam.

Comdr. David H. Gottwals, CEC, USNR, 49, assistant director of Civil Engineer Corps and Seabee reserve activities, died Jan. 3 in Bethesda, Md. He attended Carnegie Tech and was an Army veteran of World War I, after which he conducted his own contracting business in Washington. He joined the Navy in 1942, at first serving as resident officer in charge of construction in the Alaska area. Later, he commanded the Seventy-fifth Seabee Battalion at Bougainville. He also served with the Seabees in the Phillippine Islands. In August and September, 1948, Commander Gottwals served as a United States observer of the Arab-Jewish war in Palestine.

Philip A. Mader, 39, a civil engineering graduate of Dalhousie University, died at Halifax, N. S., Jan. 1. He enlisted in the Canadian army in 1939, and went overseas early in 1941.

David C. Butcher, 69, retired masonry contractor who helped build some of the largest buildings in Baltimore, Md., and Washington, D. C., died Jan. 2 at Glenville, Ga.

Emil A. Ekern, 68, designing engineer, Fay, Spofford & Thorndike, consulting engineers, Boston, Mass. died Jan. 3, in Cambridge. A graduate of the University of Wisconsin, Mr. Ekern was formerly associated with Stone & Webster Corp., and Charles T. Main Inc., Boston.

H. E. Breedlove, 41, public health engineer with the Mobile, Ala., county health department, died in Mobile Jan. 4. He was an engineering graduate of Alabama Polytechnic Institute.

Charles M. Taylor, 58, civil engineer with the U. S. Army Corps of Engineers, Huntington, W. Va., district office, died there recently. He was a civil engineering graduate of the University of Vermont and worked for the N. Y. Central R. R. at Cleveland, Ohio, before joining the corps in 1934.

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Naylor Wedge-Lock Coupling Joins Naylor Lightweight Pipe to Do a Better Job for Contractors

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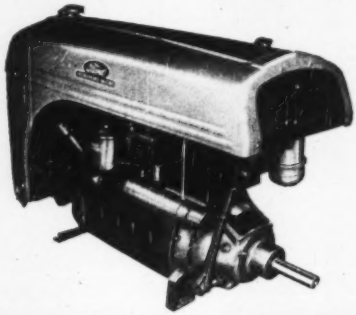
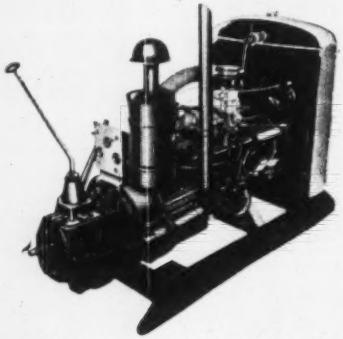


Removable dry cylinder liners . . . 3-ring pistons, chrome top ring . . . Moly-chrome valve seat inserts . . . Circulating cooling system with thermostat . . . Replaceable thin shell main and connecting rod bearings . . . Counterbalanced crankshaft . . . Magneto or battery ignition . . . Oil filter . . . Heavy duty oil bath air cleaner.

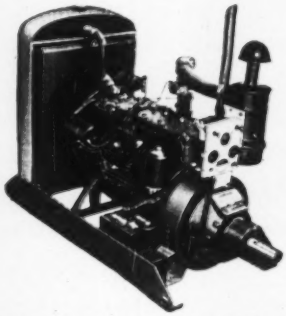
Complete

NEW Ford "226" POWER UNIT



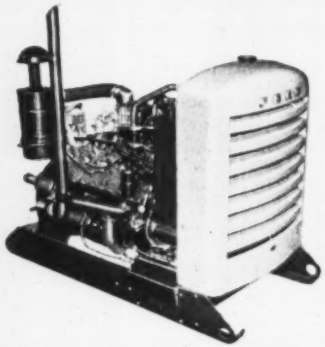
Pad mounted oil filter . . . Full length water jacketing . . . Recirculating pressure cooling system with thermostat . . . Counterbalanced crankshaft . . . Heavy duty, replaceable thin shell copper lead bearings . . . High lift camshaft . . . Balanced carburetion (downdraft or updraft) . . . Heavy duty oil bath air cleaner.

NEW Ford "254" POWER UNIT



Pad mounted oil filter . . . Recirculating pressure cooling system with thermostat . . . Autothermic pistons with chrome top compression ring . . . High lift camshaft . . . Hard faced cobalt exhaust valve (free type valves) . . . Counterbalanced crankshaft . . . Heavy duty, replaceable thin shell copper lead bearings . . . Balanced carburetion (downdraft or updraft) . . . Air cleaner.

NEW Ford "239" POWER UNIT



Dual water pumps . . . Full length water jacketing *plus* . . . Recirculating pressure cooling system with thermostat . . . Fully counterbalanced crankshaft . . . Replaceable thin shell bearings . . . Moly-chrome valve seat inserts . . . Dual downdraft carburetion . . . Oil filter and air cleaner.

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Model	Cylinders	Bore and Stroke	Displ. cu. in.	Dyn. B.H.P.	Max. Torque	Equipment Available
120	4	3⅛ x 3¼	120	38 @ 2400	92#' @ 1600	Clutch, SAE #5 hy. sng; power take-off, Ford housing, 3- or 4-speed transmission; governor. (Available as closed type power unit or engine assembly.)
226	6	3.3 x 4.4	226	80 @ 2400	182#' @ 1200	Clutch, SAE #3 or #4 housing; power take-off, Ford housing; 3-, 4- or 5-speed transmission; governor. (Available as closed or open type power unit, or engine assembly.)
239	V-8	3⅛ x 3¼	239	85 @ 2400	187#' @ 1600	Clutch, SAE #3 or #4 housing; power take-off; Ford housing with 3-, 4- or 5-speed transmission; governor. (Available as closed or open type power unit, or engine assembly.)
254	6	3.5 x 4.4	254	95 @ 2400	212#' @ 1200	Clutch, SAE #3 or #4 housing; power take-off; Ford housing; 3-, 4- or 5-speed transmission; governor. (Available as closed or open type power unit, or engine assembly.)
337	V-8	3½ x 4⅛	337	117 @ 2400	257#' @ 1600	Clutch, 5-speed direct-or-fifth transmission; overdrive transmission, direct drive power take-off. (Available as closed or open type power unit, or engine assembly.)

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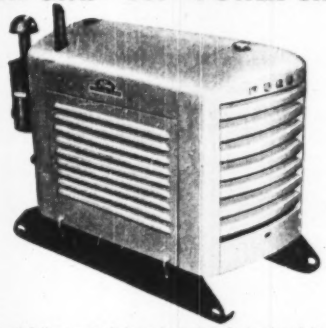
NEW Ford "337" POWER UNIT



Drop forged fully counterbalanced crankshaft, hardened journals . . . Heavy duty, replaceable thin shell copper lead bearings . . . Hard faced cobalt exhaust valves (free type valves) . . . Autothermic pistons, chrome top ring . . . Dual centrifugal water pumps . . . Full length water jackets . . . Recirculating pressure cooling system with thermostat . . . Dual downdraft carburetion . . . Oil filter and air cleaner.

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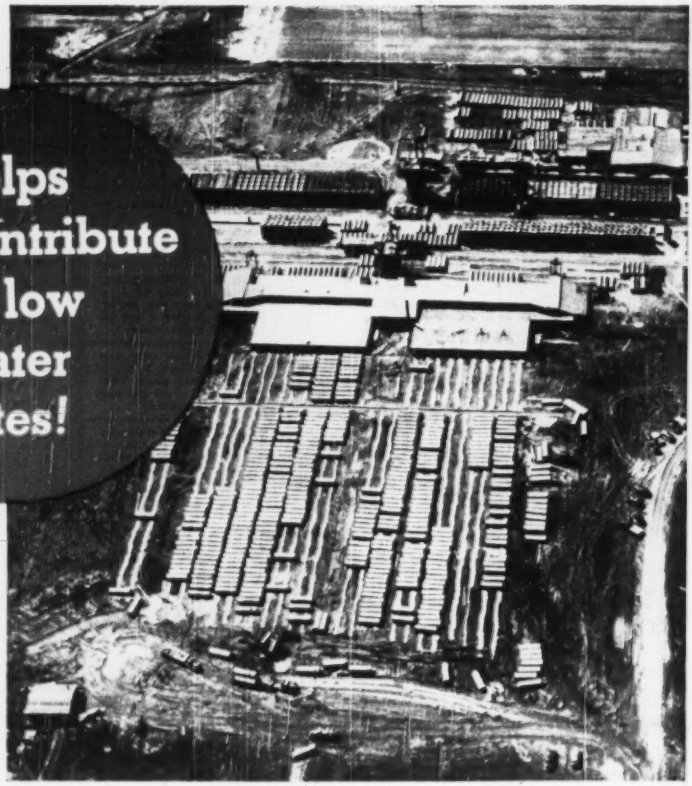

A temporary Lock Joint pipe plant at the site. Use of local labor and materials returns to the community a large part of the pipeline cost.

Although a modern water supply system represents a sizeable investment, sound engineering makes it possible to keep water rates at a minimum.

Knowing this, economy-minded water supply engineers specify Lock Joint Reinforced Concrete Pressure Pipe for mains of 16" or larger. Lock Joint's low initial cost, its long life, its exceptionally high carrying capacity and its negligible maintenance cost assure the utmost service for the consumer's dollar.

Water works officials who have installed Lock Joint pipe lines point to these lines as the most economical in their entire systems.

We shall be glad to discuss your requirements. Simply write or call our nearest office.

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SCOPE OF SERVICES—Lock Joint Pipe Company specializes in the manufacture and installation of Reinforced Concrete Pressure Pipe for Water Supply and Distribution Mains in a wide range of diameters as well as Concrete Pipe of all types for Sanitary Sewers, Storm Drains, Culverts and Subaqueous Lines.

LOCK JOINT
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CONSTRUCTION REPORTS

Bids Asked—Low Bidders—Contracts Awarded

ELSIE EAVES, Manager — *J. A. MAHONEY, Reports* — *M. R. ROESSLER, Statistics*

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WATER SUPPLY

BIDS ASKED

† **Mich., Fort Custer**—B.A. 1/24—Veterans Admin., Vermont Ave. between H and I Sts., N. W., Wash. 25, D. C., addnl. water supply, incl. meter, meter pit, underground water main, etc., for Veterans Admin. Hospital, Spec. 4974.

Mont., Havre—B.A. 1/30—City, City Hall, water treatment plant with intake at river. $50,000. CD 11/17.

Tex., LaMarque—B.A. 1/30—Galveston Co., Courthouse, Galveston, elevated steel tank and tower, water supply well. $60,000. W. P. Moore, 4605 Montrose Blvd., Houston, and Reginald F. Taylor, Bankers Mortgage Bldg., Houston, engrs.

Ia., Council Bluffs—B.A. 1/31—Bd. Waterworks Trustees, at office Council Bluffs City Water Works, Contr. 16, water purification plant; Contr. 21, 25 St. Feeder Main; Contr. 18-R, pumps; Contr. 19-R, switchgear and motor control, Burns & McDonnell Eng. Co., P. O. Box 7088, 95 and Troost Sts., Kansas City, Mo., consult. engrs. CD 5/20/48.

Tex., Eagle Lake—B.A. 1/31—City, WW. $105,000. The Marvin Turner Engineers, Nalle Bldg. Annex, Austin, engrs. CD 9/6.

LOW BIDDERS

† **N. M., Las Cruces**—U. S. Eng., Box 1538, Albuquerque, cancelled bids to have been opened Jan. 18 production water supply well, White Sands Proving Ground. Serial No. Eng-29-005-50-28. $30,000. CD 1/5.

CONTRACTS AWARDED

▲ **Ala., Mobile**—City Waterworks Bd., water pipeline from Big Creek to industrial area north of city, to Lock Joint Pipe Co., 150 Rutledge Ave., East Orange, N. J. $2,007,771.

Tex., Abilene—City, supply lines. (Lake Fort Phantom Hill Supply Line), 44,812 ft. 30 in. c.i. pipe, appurtenances, connections, to Bell Braden Barker & Gilvin, Herring Hotel, Amarillo. $582,578. Bids 12/30. CD 1/5, under LB.

SEWERS, WASTE DISPOSAL

BIDS ASKED

† **Mich., Fort Custer**—B.A. 1/24—Veterans Admin., Vermont Ave. between H and I Sts., N. W., Wash. 25, D. C., approx. 11,000 cu. ft. incinerator bldg. 97, incl. incinerator, walks, grading, plumbing, heating, electrical work, outside services, etc., for Veterans Admin. Hospital, Spec. 4976.

▲ **Pa., Norristown**—B.A. 1/24—Norristown Boro. Secondary Sewage Treatment Plant addn.; alterations. $1,800,000. Extended date. William A. Goff, Inc., Broad St. Station Bldg., Phila., engr. CD 11/30.

Conn., Bristol—B.A. 1/27—City, D. J. Donovan, supt. P. Wks.; City Hall, 15,000 ft. 8- to 21-in. sanitary sewers in Farmington Ave. and Mix Sts.; Contr. 8, Metcalf & Eddy, 130 Statler Bldg., Boston, Mass., engrs.

Tex., Lamarque—B.A. 1/30—Galveston Co., Courthouse, Galveston, sewage disposal plant in connection with proposed hospital. $50,000. W. P. Moore, 4605 Montrose St., Houston, and Reginald F. Taylor, Bankers Mortgage Bldg., Houston, engrs.

Mich., Detroit—B.A. 1/31—Dpt. P. Wks., City Hall, Contr. PW-998-1001, approx. 4.9 Mi. 10½ ft. sewer under Livernoise and Dragoon Aves. and rights-of-way, from Joy Rd. to Detroit River at Fort Wayne. Plans deposit $10. CD 3/30/43. G. R. Thompson, city engr.

Tex., Eagle Lake—B.A. 1/31—City, storm sewers, $75,000, sanitary sewers, plant, $139,000. The Marvin Turner Engineers, Nalle Bldg. Annex, Austin, engrs. CD 10/6.

Tex., Pasadena—B.A. 1/31—City, 24 and 30 in. precast concrete storm sewers from Tartet St. to Red Bluff St. on Jackson and Thomas Aves. $110,000. George H. Smith, c/o owner, city engr. CD 9/22/48.

BRIDGES

LOW BIDDERS

California—State Div. Hys., Sacramento, Jan. 4, steel girder bridge over San Leandro Creek and tracks of S. P. Company at south city limits, Oakland, Alameda Co., from C. B. Tuttle Co., 268 Belmont Ave., Long Beach, $680,741. CD 12/12.

STREETS AND ROADS

LOW BIDDERS

New York—State Dpt. P. Wks., Albany, cancelled bids to have been opened Jan. 25, hydraulic fill for roadway embankment 1.76 mi. Cap Tree State Parkway extension from north side of State Boat Channel at Cap Tree Island, northward to point near Route 27-A, approx. 2 mi. east of Babylon, Suffolk Co. $285,000. CD 1/5.

▲ **Pennsylvania**—Pennsylvania Turnpike Comn., 11 N. 4 St., Harrisburg, Jan. 4, grading, structures, drainage, paving 4.12 mi. Sec. 31-D, Western exten. of Turnpike from point approx. 2,000 ft. west of Beatty Rd. in Patten Twp. to point approx. 930 ft. east of Allegheny-Westmoreland Co. line, Allegheny and Westmoreland Counties, from Ralph Myers Contg. Co., Salem, Ind., $3,068,110; grading, structures, drainage, paving 3.24 mi. Sec. 31-E, Western exten. of Turnpike from point approx. 830 ft. east of Allegheny-Westmoreland Co. line, approx. 3,800 ft. west of T.R. 180, Westmoreland Co., from Pavia Co., Verona, $1,398,904. CD 12/13.

CONTRACTS AWARDED

▲ **New York**—Bureau Contracts & Accounts, Albany, grading, drainage 0.28 mi. Cross Bronx Expressway, two complete bridges and footings for a third, asph. paving access roads and local streets, sidewalks, curbs and utilities, Bronx River Ave. to Croes Ave., Bronx Co., to Poirier & McLain Corp., 33 W. 42 St., New York, $1,311,667. Bids 11/22. CD 11/30, under LB.

Tex., Bonham—Fannin Co. Courthouse, Bonham, improvs., surf. Road Dist. 17, Approx. $62,000; 4 mi. farm-to-market road in Road Dist. 9, northeast sect. of county, $58,000; 5 mi. farm-to-market road work, Road Dist. 9, northwest sect. of county, Approx. $65,000; force account. Grand total, approx. $185,000. CD 11/23.

Que., Montreal—Municipality, paving 14, Benborough, Coronation and Van Horne Aves., Everett and Mazaron Sts., to Charles Duranceau Ltd., 2545 Jacques Hertel St., $60,353. CD 7/17/46.

EARTHWORK, WATERWAYS

BIDS ASKED

† **Pennsylvania**—B.A. 1/24—U. S. Eng., 121 N. Broad St., Phila., Zone 1, borings at site of proposed Bear Creek Dam on Lehigh River, on west side of Lehigh River below the mouth of Bear Creek approx. 5 mi. northeast of White Haven. Inv. CIVENG-36-109-50-45.

† **Illinois**—B.A. About 1/24—U. S. Eng., 826 U. S. Court House and Custom House, St. Louis 1, Mo., constr. levees East St. Louis Illinois and vicinity East Side Levee and Sanitary Dist. Proj. Item 1-D (2), St. Clair Co., CIVENG-23-065-50-62.

† **Texas**—B.A. 1/26—U. S. Eng., 606 Santa Fe Bldg., Galveston, reservoir clearing, initial contract, Whitney Dam and Reservoir, CIVENG-41-243-50-145. CD 7/16/46.

† **Kansas**—B.A. about 1/26—U. S. Eng., P. O. Box 61, Tulsa, 2, Okla., constr. Big Slough-Cowskin Floodway Parcel A, Arkansas River Basin, Wichita-Valley Center, Arkansas River, Inv. NICIVENG-34-0566-50-83.

†**West Virginia**—About 1/28—U. S. Eng., Madison Ave. and 8 St. W., Huntington Zone 18, operators quarters and public shelter for Bluestone Dam, Bluestone Reservoir Proj., Serial No. CIVENG-46-022-50-39.

PROJECTS COVERED

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $28,000; other public works $50,000; industrial buildings $68,000; other buildings $250,000.

Classes of Construction

(Name in order of Listing)

Water Supply	Latin America
Sewers, Waste Disposal	Public Buildings
Bridges	Commercial Buildings
Streets & Roads	Industrial Buildings
Earthwork, Waterways	Unclassified

Stages Reported

PROPOSED WORK: Including appointment of engineers or architects.

BIDS ASKED (new announcements only). For full calendar, see also preceding issues of ENR.

LOW BIDDERS: On jobs below $500,000 value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

Symbols and Abbreviations Include:

†	Federal Government
▲	Project of $1,000,000 or over.
B.A.	Bids Asked
ENR	Engineering News-Record
CD	Engineering News-Record Construction Daily

†**Texas**—B.A. 1/31—U. S. Eng., 606 Santa Fe Bldg., Galveston, dredging Cow Bayou Channel of Sabine-Neches Waterway, Orange Co., Inv. No. CIVENG-41-243-50-127. $140,000.

†**Washington**—B.A. 1/31—Bureau Reclamation, Dpt. Interior, Ephrata, earthwork, structures, surf. and constr. Lind Coulee Bridge relocation of county roads vicinity of O'Sullivan Dam Columbia Basin Proj., approx. 8 mi. west of Warden, Grant Co., Spec. 2876. L. N. McClellan, Bldg. 1-A, Denver Federal Center, Denver, Colo., ch. engr.

†**Washington**—B.A. 2/2—Bureau Reclamation, Dpt. Interior, Ephrata, earthwork, concrete lining and structures, station 1410 plus 00 to Station 2090 plus 75 East Low Canal and Station 0 plus 00 to Station 173 plus 65, Weber Wasteway, Columbia Basin Proj., near Moses Lake, Spec. 2879. L. N. McClellan, Bldg. 1-A, Denver Federal Center, Denver, Colo., ch. engr.

† **Kansas**—B.A. 1/31—U. S. Eng., 601 Davidson Bldg., Kansas City, Mo., constr. Levee Unit 500-R, located along right bank of Missouri River in Doniphan Co., southeast of White Cloud, CIVENG 23-028-50-77.

† **Louisiana**—B.A. 1/31—U. S. Eng., foot of Prytania St., New Orleans, Zone 9, Gulf Intracoastal Waterway, near intersection of Calcasieu River and Introcoastal Waterway at Mile 237.5 in Calcasieu Parish, about 10 mi. southwest of Lake Charles, CIVENG-16-047-50-185.

† **Tennessee**—B.A. 1/31—U. S. Eng., P. O. Box 97, Memphis, Zone 1, preparation slopes and construct asph. paving Presidents Island, Memphis Harbor Proj., Serial No. CIVENG-40-041-50-88. CD 12/29.

LOW BIDDERS

† **Iowa**—U. S. Eng., 1709 Jackson St., Omaha 2, Neb., cancelled bids to have been opened Jan. 19, Agricultural Levee Unit L-614, Sect. 1, along right and left banks of Upper Pony Creek Ditch and along left bank of the Missouri River between mouth of Mosquito Creek and Levee Mile 21.5, Spec. CIVENG-25-066-50-105. CD 12/14.

New York—Bureau Contracts & Accounts, Albany, Jan. 3, resurf. concrete side walls of Lock 7, Erie Canal, town of Niskayuna, Schenectady Co. Contr. M-95, from Weber Constr. Co. Inc., 133 Wall St., Schenectady, $115,675. Est. $129,280. CD 12/21.

PUBLIC BUILDINGS

BIDS ASKED

Mo., Dexter—SCHOOL—B.A. 1/24—Consolidated School Dist 7, Steddard Co., 1 story, 65x198 ft., brick, concrete school, Alternate A incl. 59x135 ft. classroom wing, Alternate B incl. 50x81 ft. all-purpose bldg., etc. Approx. $270,000. Bid date changed. CD 12/12.

† **N. J., Bordentown**—POST OFFICE—B.A. 1/24—Pub. Bldgs. Admin., Custom House, New York 4, N. Y., misc. repairs to U. S. Post Office.

R. I., Bristol—MEMORIAL—B.A. 1/23—Town, J. F. Xavier, secy. Veterans Comm., 615 Wood St., brick, stone memorial bldg., incl. town offices, auditorium, etc. Approx. $250,000. CD 3/17.

Ga., Atlanta—SCHOOL—B.A. 1/24—City Bd. Educ., City Hall, Williams Street School addn. $460,000. Plans deposit $35. Arthur Neal Pulliam, Sr. and Jr., Henry Grady Bldg. archts. CD 9/3/47.

Minn., Rochester—PLANT—B.A. 1/24—State, Dpt. Admin., P. T. Peterson, dir. Purchases, 19 State Capitol St., St. Paul, power plant auxiliary equipment and piping sys. at State Hospital. Approx. $200,000. Plans deposit $35, Ellerbe & Co., E 505 First National Bank Bldg., St. Paul, archts. and engrs. CD 10/27/47.

Mich., Detroit—HOSPITAL—B.A. 1/24—City, Roger V. Walker, pres. Bd. Health, Contr. BH-19, 5 story, 52x52x90x217 ft. T-shaped, structural steel, reinf.-con., masonry, Receiving Hospital addn., St. Antoine St. between Clinton and Macomb Sts. Plans deposit $25, G. R. Thompson, Griswold Bldg., Zone 26, city engr. CD 7/31/44.

N. Y., New York—SCHOOL—B.A. 1/24—School Bldgs., Design & Construction, 49 Flatbush Ave. exten., Brooklyn, Zone 1, general contract, plumbing and drainage; heating and ventilating; electrical and lighting fixtures for P. S. 109, Madison Ave. between E. 108 and 109 Sts. Plans deposit $17 general contract, $7 each others. CD 1/13/44.

† **Mo., Jeffersons Barracks** — HOSPITAL ALTERATIONS—B.A. 1/24—Veterans Admin., Vermont Ave. between H and I Sts. N. W., Wash. 25, D. C., altering bldgs. 1, 4, and 23, central sterile supply unit in Bldg. 1, addnl. laboratory facilities, etc., in Bldgs. 1 and 4, for Veterans Admin. Hospital, Spec. 4973.

Wis., Greenfield (P. O. West Allis—SCHOOL—B.A. 1/24—School Dist. 8, 4619 W. Forest Home Ave., Zone 14, 2 story, 65x209 ft., steel, concrete, brick school, 53x60 ft. gymnasium, 30x53 ft. boiler room, concrete fdns., floors, $450,000. Plans deposit $25. F. S. Gurdo, 1015 W. Mitchell St., Milwaukee, Zone 4, archt. CD 12/31.

Conn., Wolcott—SCHOOL—B.A. 1/25—Bd. Educ., Wolcott school, $275,000. Extended date. Carl J. Malmfeldt & Assoc., 36 Pearl St., Hartford, archts. CD 11/30.

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Ill., Wilmette—LIBRARY—B.A. 1/25—Village, Village Hall, 2 story, brick, concrete, steel, stone library, $350,000. Holabird, Root & Burgee, 180 N. Wabash St., Chicago, archts. CD 12/15.

Md., Frederick—HOSPITAL—B.A. 1/25—Frederick Memorial Hospital, Park Ave., brick, concrete, steel, north and south wings and nurses home, $750,000. Plans deposit $25. Jas. R. Edmunds, Jr., 130 W. Hamilton St., Baltimore, archt. Alex E. Forrest, 518 Cathedral St., Baltimore, structural engr. Jas. Posey, 10 E. Pleasant St., Baltimore, mech. engr. CD 4/19.

Tenn., Knoxville—HIGH SCHOOL—B.A. 1/25—Bd. Educ., 624 Lamar St., East Knoxville High School. Approx. $250,000. Rentenbach Eng. Co., 406 W. 5 Ave., archt. CD 7/15.

✦Tenn., Johnson City—ADMINISTRATION CENTER—B.A. On or About 1/25+—U. S. Eng., 2301 Grant St., Mobile, Ala., initial alterations to Veterans Admin. Center for ORC use at Monutain Home, near here. Inv. Serial No. Eng. 01-076-50-31.

✦N. Y., Youngstown—BUILDING ALTERATIONS—B.A. 1/26—U. S. Eng., 80 Lafayette St., New York, altering Bldg. 13, Fort Niagara.

Tex., Midland—SCHOOL—B.A. 1/30—Bd. Educ., Frank Monroe, supt. Schools, Midland, 1 story brick, tile, steel school, $325,000. Plans deposit $25. Wilson & Patterson, 202 Majestic Bldg., Fort Worth, archts. CD 11/15.

Minn., Benson—SCHOOLS—B.A. 1/26—H. H. Swanson, archt., 500 Sexton Bldg., Minneapolis, 3 story, 80x142 ft. school addn., 3 story, 63x100 ft. school addn., and school alterations, $320,000. for Bd. Educ., F. E. Kearney, clk. CD 3/17.

N. Y., Ronkonkoma—SCHOOL—B.A. 1/26—Bd. Educ., Union Free School Dist. 11, Ronkonkoma, school addn. $260,000. Eugene S. Belbig, 6 E. Perkal St., Bay Shore, archt.

Tex., Houston—SCHOOL—B.A. 1/26—Houston Independent School Dist., 1600 Washington St., brick, steel frame South Acres School, concrete fdn. Approx. $250,000. Stayton Nunn, 2425 Ralph St. co-ord. archt., Wilson, Morris & Crane, 3330 Graustark St., archts. CD 9/29.

✦ West Virginia—QUARTERS—B.A. 1/26—U. S. Eng., Huntington 18, W. Va., operators quarters and public shelter for Bluestone Dam, Bluestone Reservoir Proj., New River, Serial No. CIVENG-46-022-50-39. Extended date CD 12/28.

Ore., Toledo—SCHOOLS—B.A. 1/27—Lincoln County School Dist., Toledo, rein.-con. Stanton School, at Toledo; 9 room rein.-con. Siletz School at Siletz. Plans deposit $50 each. F. Marion Stokes, Hughes Bldg., Portland, archt.

Mich., St. Joseph—COUNTY JAIL, etc.—B.A. 1/30—Bd. Supervs., Berrien Co., St. Joseph, 2 story, tunnt., 47x132 ft. and 59x175 ft. T-shaped jail house; 45x51 ft. masonry, rein.-con., reinforcing steel power house, $800,000. Plans deposit $50, CD 12/6.

Tex., Menard—SCHOOL—B.A. 1/30—Menard Independent School Dist., Menard, 1 story, brick, hollow tile wall school, concrete frame and fdn., $325,000. Extended date. Wilson & Patterson, Majestic Bldg., Fort Worth, archts. CD 12/12.

Calif., Berkeley—SCHOOL—B.A. 1/31—Bd. Educ., 1414 Walnut St., 15-classroom concrete Le Conte Elementary School, $775,000. Lump sum deposit $40. Dragon, Schmidts & Hardman, 2320 University Ave., archts. CD 2/7/47.

Calif., Los Angeles—ARMORY—B.A. 1/31—State Div. Architecture P. Wks. Bldg., Sacramento, alter, remodel 4 story and 1 story annex Hope St. Armory. Plans deposit $25. Anson Boyd, Sacramento, state archt.

Calif., San Francisco—SCIENCE—B.A. 1/31—State Div. Architecture, Pub. Wks. Bldg., Sacramento, (1) general work (2) plumbing (3) heating and ventilating, 2 story, 51,000 sq. ft. rein.-con. science building at San Francisco State Teachers' College. Plans deposit $25. Anson Boyd, Sacramento, state archt. CD 3/17.

Mont., Butte—CIVIC CENTER—B.A. 1/31—Silver Bow Co., Courthouse, monolithic concrete, steel civic center, incl. grading, filling on 40 acre tract, field lighting, sewers, $995,000. J. G. Link & Co., 111 N. Montana St., archt. CD 1/17.

✦ Alaska, Palmer—HOUSES—B.A. 1/31—Dpt. Agriculture, c/o Chief, Div. Purchases, Sales & Traffic, 14 St. and Independence Ave. S.W., Wash. 25, D. C., 7 houses. Extended date. CD 12/13.

▲ Ill., Elgin—SCHOOL—B.A. 2/1—Bd. Educ., Dist. No. 353 E. Chicago St., 2 story, steel, concrete brick North Junior High School, $1,000,000. Extended date. Leroy Thompson, 455 Congdon St., archt. Elmer Gerlick & Assoc., 102½ Grove St., assoc. archts. CD 12/29.

▲ N. C., Raleigh—AGRICULTURE WING—B.A. about 2/1—State B. P. Buildings & Grounds, George B. Cherry, supt., Raleigh, wing to agriculture bldg., Edenton and Halifax Sts. Approx. $1,000,000. A. J. Maxwell, Jr., Borden Bldg., Goldsboro, archt. L. E. Wooten & Co., Capitol Club Bldg., engrs.

▲ N. C., Raleigh—BUILDING—B.A. After 2/1—State Bd. Pub. Bldgs. & Grounds, George B. Cherry, supt., Raleigh, building for State Hy. & Pub. Wks. Comm., Morgan and Wilmington Sts. Approx. $1,000,000. A. J. Maxwell, Jr., Borden Bldg., Goldsboro, archt. L. E. Wooten & Co., Capitol Club Bldg., engrs. CD 1/12/45.

Ky., Glasgow—HOSPITAL—B.A. about 2/1—T. J. Samson Comm. Hospital, Glasgow, 3 story, humnt., brick, rein.-con. hospital with 2 wings $425,000. Thos. J. Nash & Sons, Kentucky Home Life Bldg., Louisville, archts. CD 12/14.

▲ N. J., Trenton—SCHOOL—B.A. about 2/1—Ewing Twp. Bd. Educ., Parkway Ave., Trenton, high school, $1,200,000. Micklewright & Mountford, 72 Ewing St., archts. CD 6/16.

LOW BIDDERS

▲ Ala., Birmingham—SCHOOL—University of Alabama, Tuscaloosa, Jan. 5, pre-clinical and dental school of medical college, from Daniel Constr. Co., 8227 Ave. S, $1,286,00. CD 11/30.

Calif., Davis—RESIDENCE HALLS—Bd. Regents University of California, Berkeley, Jan. 5, 18 three-story, rein.-con. frame residence halls, on Davis Campus, from Campbell Constr. Co., 800 R St., Sacramento, $875,967. CD 11/10.

✦ Calif., Los Angeles—KITCHEN—Veterans Admin., Vermont Ave. between H and I Sts. N.W., Wash. 25, D. C., cancelled bids to have been opened Feb. 21, Kitchen and Dining Hall Bldg. 300, for veterans Administration Center. CD 12/27.

Ont., Petawawa—SCHOOL—Central Mortgage & Housing Corp., 395 Fleet St. W., Toronto, cancelled bids to have been opened Jan. 20, 18 classroom frame school Tender D.N.D. Non-Urban. Approx. $375,000. Will revise plans. CD 12/29.

Ont., Rockcliffe—SCHOOL—Central Mortgage & Housing Corp., 395 Fleet St. W., Toronto, cancelled bids to have been opened Dec. 20, 24 room frame school at D.N.D. Housing. Approx. $425,000. Will revise plans. CD 12/5.

Ont., Trenton—SCHOOL—Central Mortgage & Housing Corp., 395 Fleet St. W., Toronto cancelled bids to have been opened Jan. 4, 24 classroom school Tender-Trenton (D.N.D. Non-Urban) No. 2/49. Approx. $425,000. Will revise plans. CD 12/15.

CONTRACTS AWARDED

Calif., Los Angeles—HIGH SCHOOL—City Bd. Educ., 1425 S. San Pedro St., Westchester High School, to V. O. Brunzell Co., Box 432, Gardena, $930,431. Bids 12/20. CD 12/29, under LB.

Ga., Waynesboro—HOSPITAL—Burke County Hospital Auth., Waynesboro, hospital, to Claussen & Webster, Augusta, $249,300. Bids 12/21.

✦ Md., White Oak—EXPLOSIVE RESEARCH FACILITIES—Potomac River Naval Command, Naval Gun Factory, Wash. 25, D. C., explosive research facilities at Naval Ordnance Laboratory, Spec. 20986, to American Constr. Co., 261 Constitution Ave., Wash., D. C., Alternates 1, 2, 6, 7, and 9, $399,450. Bids 12/21, awarded 1/4. CD 12/29.

N. Y., Albany—HALL—Dpt. Educ., State Education Bldg., general contract Draper Hall addn., to Panzieri-Henderson, Inc., Terminal St., $597,129. Bids 11/9. CD 11/15, under LB.

✦ Tenn., Oak Ridge—LABORATORY—U. S. Atomic Energy Comm., P. O. Box 3, Attention R. J. Dunbar, Eng. Div., Main Administration Bldg., Laboratory Bldg. 9213 in controlled area, Inv. No. 401-50-3A, to John A. Johnson & Sons, 268 41 St., Brooklyn 32, N. Y. $374,769. Bids 12/30. CD 11/23.

Tex., Iraan and Sheffield—SCHOOL—Sheffield Independent School Dist., Pecos Co., Sheffield, school, to E. D. Porter, 1901 W. South Front St., Midland, $519,949. Bids 11/1. CD 11/10, under LB.

Wash., Seattle—SCHOOL—School Dist. 1, 810 Dexter Ave., general contract enlarging, altering 1 and 3 story mill rein.-con. Lawton School to J. B. Warrack Constr. Co., Securities Bldg., Zone 1. $317,800. Bids 1/5. CD 12/16.

COMMERCIAL BUILDINGS

BIDS ASKED

Md., Indian Head—DWELLING UNITS—E.A. 1/25—Dist. Pub. Wks. Officer, Potomac River Naval Command, U. S. Naval Gun Factory, Wash. 25, D. C., construct, manage and finance 102 dwelling units incl. utilities, streets, walks, services and site imprvs. at Naval Powder Factory.

Md., Paxtuxent River—DWELLING UNITS—E.A. 1/25—Dist. Pub. Wks. Officer, Potomac River Naval Command, U. S. Naval Gun Factory, Wash. 25, D. C., construct, manage and finance 950 dwelling units, incl. utilities, streets, walks, services and site imprvs. at Naval Air Test Center and Naval Air Station.

Va., Quantico—HOUSING—B.A. 1/25—Pub. Wks. Officer, Potomac River Naval Command, U. S. Naval Gun Factory, Wash. 25, D. C., construct, finance and manage 450 dwelling units, incl. utilities, streets, walks, services and site imprvs. at Marine Corps School.

▲ Ia., Ottumwa—HOSPITAL—B.A. 1/31—Bd. Trustees Ottumwa Hospital Assn., Ottumwa, hospital, $1,500,000. Morgan & Gelatt, Burlington, archts. CD 12/1.

SOON LETS CONTRACT

N. Y., Ridgewood—TELEPHONE—New York Telephone Co., 101 Willoughby St., Brooklyn, soon lets contract telephone bldg. addn. Voorhees, Walker Foley & Smith, 101 Park Ave., New York, Zone 17, archts.

N. Y., Woodmere—ACADEMY—Woodmere Academy, 336 Woodmere Blvd., soon lets contract academy addn. $500,000. Adams & Woodbridge, 204 E. 19 St., New York, Zone 16, archts.

Tex., Midland—DIAL—Southwestern Bell Telephone Co., Akard, Jackson and Wood Sts., Dallas, soon lets contract 2 story, humnt., brick, stone dial telephone bldg., concrete pier and beam fdn. and frame, $250,000.

Raymond MAKES 5 TYPES OF CONCRETE PILES

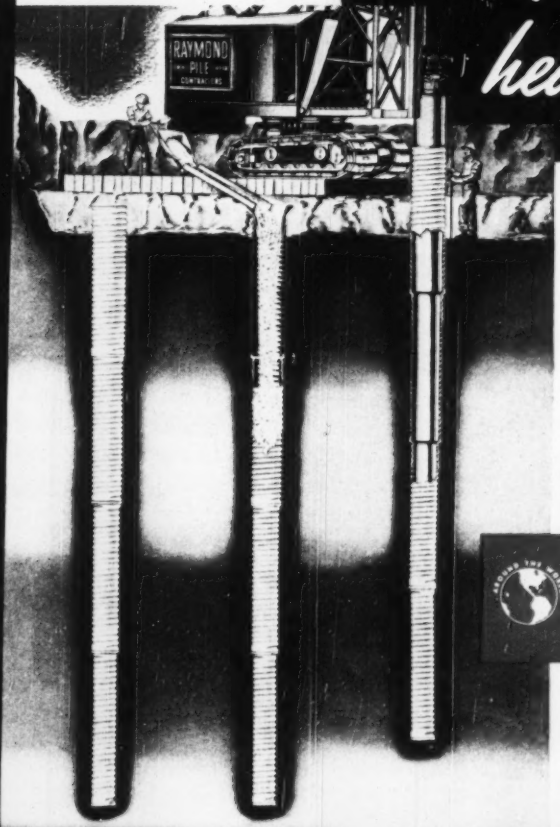
1. STANDARD . . . 2. STEP-TAPER . . . 3. PIPE STEP-TAPER

4. COMPOSITE . . . 5. GOW CAISSONS

Raymond installs every type of pile: cast-in-place concrete, precast concrete, steel pipe, wood and H-beam. Raymond operations include underpinning, borings and soil investigations, waterfront construction and harbor and river improvements, also cement mortar lining of pipes by the Centriline Corporation, a Raymond Subsidiary.

At left, completed Step-Taper Pile. Center, filling the permanent steel shell with concrete after internal inspection. Right, driving the pile with rigid core.

2. STEP-TAPER PILES FOR *long lengths* WITH *heavy loads*



Raymond Step-Taper Concrete Piles driven with rigid steel cores and heavy hammers are designed to develop high load-carrying capacities at depths to 80 feet. The permanent steel shell maintains the resistance developed during driving. After the shell is inspected internally, it is filled with concrete and cut off at the specified elevation.

You are invited to discuss with our engineers the efficiencies and savings made possible by Raymond's exclusive, original concrete pile designs.

◀ RAYMOND PILES MAINTAIN DRIVING RESISTANCE

Raymond CONCRETE PILE CO.

140 CEDAR ST., NEW YORK 6, N. Y.

BRANCH OFFICES: Boston, Syracuse, Philadelphia, Baltimore, Washington, Pittsburgh, Atlanta, Miami, Houston, Kansas City, St. Louis, Cleveland, Chicago, Detroit, Salt Lake City, Portland, San Francisco, Oakland, Los Angeles and principal cities in Latin America.

52 YEARS FOUNDED 1901 OF PROGRESS

BUILT TO

The Power Graders That Have Everything

"88-H"—a new model which brings to the field of motor graders of medium size the extra traction and power-at-the-blade of all-wheel drive, and the unequaled maneuverability of all-wheel steer.

The Austin-Western Power Grader of today owes its matchless performance to *completely effective* use of power. Through All-Wheel Drive, every pound of weight is a powered pound, harnessed to a driving wheel—and contributing every ounce to tractive effort. This tremendous traction—perfectly directed and controlled through All-Wheel Steer—provides superb earth moving ability, and mastery of all types of work. Additional values are offered by specialized attachments, which greatly increase the usefulness and day-in and day-out profit making ability of the graders.

"99-H"—out in front of the motor grader parade since the original "99" of 1937. Popular with contractors and highway departments for its all-around performance, under all conditions, in all seasons.

MASTER "99"—another new model, combining all of the time- and money-saving features of the "99-H" with the extra power, traction and road speed of its 100 horsepower engine.

Model "40" Sweeper

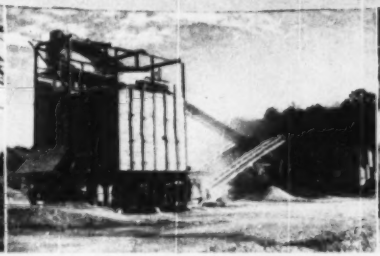
Fast, maneuverable, and economical in operation. No troublesome, expensive conveyor or elevator to keep in adjustment and repair—dirt is thrown directly into the 2-yard hopper. Can be equipped with either right-hand or left-hand gutter broom or both. The Leaf Broom attachment simplifies the collection of heavy accumulations of leaves.

AUSTIN-WESTERN COMPANY, AURORA, ILLINOIS, U. S. A.

OUTPERFORM

Crushing, Screening and Washing Plants

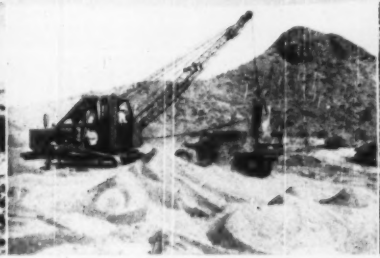
PORTABLE . . . STATIONARY



The AUSTIN-WESTERN LINE includes Jaw Crushers and Roll Crushers in a wide range of sizes; plus matching screens, elevators, conveyors and bins. Exclusive features increase output, assure constant operation and reduce maintenance costs. Skilled engineering characterizes each and every Austin-Western crushing, screening and washing plant, which is tailor-made to a particular production problem. We would welcome the opportunity to discuss yours.

"Badger" Convertible Shovel

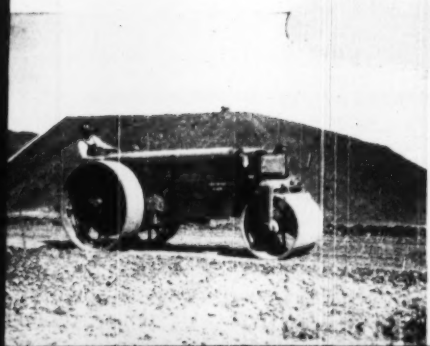
"SWINGS LESS TO MOVE MORE"



With the Badger, only the bucket, boom, turntable and mast swing. The heavy main deck, engine, transmission and main frame are STATIONARY—to counterbalance heavier loads and avoid objectionable tail-swing.

The Badger makes more swings per minute, day, month and year . . . wastes no fuel or power swinging extra weight . . . digs the hardest "diggable" material . . . can work in closer quarters.

Road Rollers



3-WHEELED ROLLERS have full length side plates for maximum rigidity; low center of gravity for smooth operation, and hydraulic power steer. All may be had with gas or diesel engine.

TANDEM ROLLERS. Variable weight type—in 5-8 ton and 8-10½ ton sizes. Important improvements provide exceptionally smooth and steady performance on precision jobs.

BUILDERS OF ROAD MACHINERY SINCE 1859

Austin Western

write for your copy

of Hendrick
Mitco Products Catalogue

Tells how Hendrick Mitco is made from steel bars, forced into integral panels under hundreds of tons of hydraulic pressure . . . shows their advantages for open steel flooring, and for stairways, ladders and fire escapes . . . explains their use, with fill of concrete, cement, asphalt or composition, as Armorgrids for floors, platforms, ramps and driveways that have to withstand heavy traffic.

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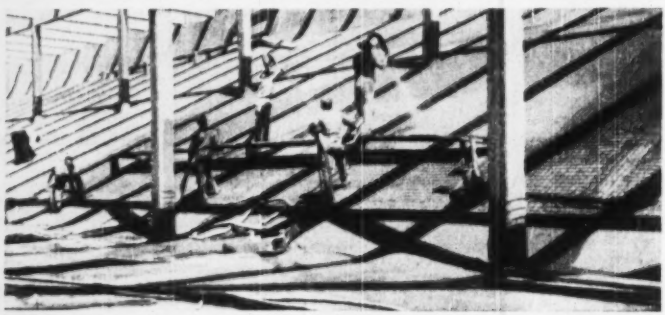
Manufacturing Company
45 DUNDAFF STREET, CARBONDALE, PENNA.
Sales Offices In Principal Cities

Perforated Metals
Perforated Metal Screens
Architectural Grilles
Mitco Open Steel Flooring,
"Shur-Site" Treads and Armorgrids

"GUNITE" Selected to Repair Reservoir



When the old, open Ballou Park Reservoir at Danville, Va., was improved and covered in 1948, excessive leakage of the old brick lining was stopped with reinforced "GUNITE". The photo shows details of the process. After concrete columns to support the roof were placed, wire mesh reinforcing was laid and the entire reservoir was "GUNITED". Note that the reinforcing and "GUNITE" were carried over the column footings and up the columns approximately three feet to prevent leaking at those points.

The use of "GUNITE" for repair and construction of reservoirs, bridges, buildings, etc., is illustrated and described in Bulletin A2400. We will gladly send a copy at your request. On your letterhead, please.

CEMENT GUN COMPANY
"GUNITE" CONTRACTORS
GENERAL OFFICES—ALLENTOWN, PENNA. U.S.A.
MANUFACTURERS OF THE CEMENT GUN

CONTRACTS AWARDED

Mo., Jennings Station (St. Louis, P. O.)—SCHOOL—Corpus Christi Catholic Parish, Rev. E. J. Blankemeier, pastor, 8443 Jennings Rd., St. Louis, Zone 21, 1 story, bsmnt., 58x215 ft. and 67x120 ft., L-shaped, brick, concrete, steel school, Switzer Ave., between Octavia and Jennings Rd., to A. H. Haeseler Bldg. & Contg. Co., 2346 Palm St., St. Louis, Zone 7. Bids 6/6. CD 6/3.

N. Y., Brooklyn—SCHOOL—East Midwood Jewish Center, 16 Court St., Zone 2, 3 story religious school, 1266 E. 21 St., to M. Shapiro & Son Constr. Co., 254 W. 54 St., New York, Zone 19. Approx. $800,000. Bids 12/31. CD 12/20.

Tex., Hitchcock—DWELLINGS—A. L. Harvey & S. H. Murray, Danciger Bldg., Fort Worth, 75 dwellings. Owner builds. $475,000. CD 12/29.

▲ **W. Va., Charleston**—ADMINISTRATION UNIT—Morris Harvey College, Library Bldg., main administration unit bldg., to C. H. Jimison, Huntington, $1,559,290. CD 12/9/45.

▲ **Que., Ville St. Michel**—HOUSING—Willie Latourneau, c/o R. Chalifoux, 6275 Papineau Ave., Montreal, housing development, day labor. Approx. $2,000,000.

INDUSTRIAL BUILDINGS

BIDS ASKED

Pa., Oil City—NEWSPAPER—B.A. 1/24—Derrick Publishing Co., 5 Center St., Oil City, newspaper bldg. Approx. $100,000. Bolton, Martin & White, 266 S. 17 St., Phila., archts.

O., Cincinnati—PACKING PLANT, etc.—B.A. Late January or February—Louis Molenkoph, archt., 4225 Kirby Ave., 1 story, bsmnt., 52x176 ft., brick, concrete block meat packing plant, garage, cooler, storage, loading dock, hog pen, killing room, offices, etc. for Schultz Bros. Co., 417 Findlay St. $100,000. Former bids rejected. CD 12/1.

▲ **Tex., Sweetwater**—PLANT—Bids Asked—United States Gypsum Co., Sweetwater, 600 ft. long concrete, steel type plant expansion. $1,000,000.

CONTRACTS AWARDED

Ark., Berryville—WAREHOUSE, etc.—Carroll Electric Cooperative Corp., Berryville, warehouse and office, to Horton Constr. Co., Clinton, $86,499. Bids 12/23. CD 12/16.

Ind., Hammond—FACTORY—American Steel Foundries, 4831 Hohman St., 40,000 sq. ft. factory addn., to Thorgersen & Ericksen, 223 N. La Salle St., Chicago 1, Ill., $200,000. Awarded 12/15. CD 6/15.

Ind., South Bend—FACTORY, etc.—Studebaker Corp., S. Main St. and New York Central R.R., 40,000 sq. ft. steel, concrete, brick factory, machine shop to Sollitt Constr. Co., 301 S. Columbia St., $220,000. Awarded 12/19. CD 12/23.

Mo., St. Louis—TERMINAL—Roadway Express Co., 901 Biddle St., Zone 1, 1 story, 70x150 ft., brick, concrete truck terminal, 52 Buchanan St., to John Hill Constr. Co., Syndicate Trust Bldg., 915 Olive St., Zone 1. Wm. B. Fullerton, Jr., 15 W. 10 St., Kansas City, Mo., archt.

N. M., Eunice—PLANT—Gulf Oil Corp., Eunice, gasoline plant unit, to Younger Constr. Co., Eunice, $465,000.

▲ **Tenn., Memphis**—WAREHOUSE, etc.—International Harvester Co., 180 N. Michigan Ave., Chicago, Ill., warehouse and office to S. & W. Constr. Co., Shrine Bldg. Approx. $1,000,000. Bids 12/7. CD 12/16, under LB.

Tex., Bailey—WAREHOUSE—Traylor Gin Co., Bailey, remodeling gin plant, warehouse. Owner builds. Approx. $90,000.

Tex., Blackwell—PLANT—Blackwell Cotton Gin Co., Blackwell, cotton gin plant. Own forces. Approx. $90,000.

Tex., Houston—WAREHOUSE—Kraft Foods, Inc., 725 White Oak St., 1 story, steel, brick, hollow tile warehouse, concrete slab fdn., to S. Y. Guthrie & Assoc., 1010 Washington Ave. $260,000.

Ont., London—WAREHOUSE—Chatworthy Lumber Co., Ltd., Glasgow St., 2 story, 30x182 ft., storage warehouse, Glasgow St., to Putherbough Constr. Co., Ltd.

UNCLASSIFIED

BIDS ASKED

✦ **S. C., Parris Island**—OIL WHARVES—B.A. 1/25—At office W. T. Eckberg, Officer in Charge of Construction, P. O. Box 365, Naval Base, Charleston, exten. oil wharves at Marine Corps Recruit Depot.

✦ **Ga., Macon**—BARRICADES—B.A. 1/26—U. S. Naval Base, P. O. Box 364, Charleston, S. C., earth barricades at explosure unloading dock at Ordnance Plant.

✦ **Tex., El Paso**—RECREATIONAL FACILITIES—B. A. 1/26—U. S. Eng., P. O. Box 1538, Albuquerque, N. M., recreational facilities. (Fort Bliss CWF-91), Serial No. 29-005 (ACWF)-50-1. Extended date.

✦ **Mass., Truro**—BUILDINGS, etc.—B.A. after 1/27—U. S. Eng., Army Base, Boston 10, six 1 story, reinf. con. concrete block bldgs.; twelve 1 and 2 story wood, concrete block bldgs., utilities. CIVENG 19-016-50-21.

✦ **N. M., Las Cruces**—CHAIN LINK FENCE—B. A. About 2-1—U. S. Eng., P. O. Box 1538, Albuquerque, chain link security fence, U. S. Naval Unit, White Sands Proving Ground, (White Sands P. G. NAV-912), Serial No. Eng-29-005-50-29. Plans deposit $10.

✦ **North Dakota**—TRANSMISSION LINES—B. A. 2/7—Bureau Reclamation, Dpt. Interior, Bismarck, James-town-Edgeley, 115 kilovolt and Edgeley-Forman 67-kilovolt transmission lines, Spec. No. 2884.

LORAIN 50 SERIES . . *The First Machine in the 1 Yard Class with Hydraulic-Coupling*

NEW! 1-YD. CLASS
A fully convertible machine in the 1 yard class—shovel, crane, clamshell, dragline, hoe.

NEW! 2 SHOVEL BOOMS
All-welded 19 and 21 ft. lengths. Square—heavy duty dipper sticks.

NEW! AIR CONTROLS
Air power steering and air control of tread lock from operator's cab.

NEW! 4 CRAWLERS
4 chain drive crawlers available — 11 to 14 ft. long; 9'8" to 13' wide. Driving mechanism, oil enclosed.

NEW! SHOE CLUTCHES
Wider, full-floating anchor type Shoe Clutches for swinging—faster response; longer life.

NEW! HYDRAULIC COUPLING
No engine stall; shocks can't reach machinery. Smooth, flexible, vibrationless power.

Yes, on the new Lorain-50 the hydraulic coupling (fluid clutch) power-take-off is standard equipment, at no extra cost! — In operation this means (1) the engine can't be stalled under any digging conditions; (2) digging impacts and stresses are absorbed before they reach the operating mechanism . . . And the Lorain-50 brings you many other NEW features, in addition to those shown . . . Your Thew-Lorain distributor has the complete story ready for you — today!

THE THEW SHOVEL CO., LORAIN, OHIO

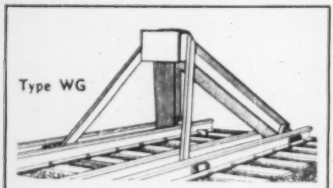
It's the LORAIN 50 for 1960

MORE FOR YOUR MONEY IN A LORAIN

THEW LORAIN®

SHOVELS • CRANES • CLAMSHELLS • DRAGLINES
HOES • MOTO-CRANES

LORAIN 50 SERIES



Prices to contractors and industries same as to the largest railroads; quick shipment. When a bumping post is knocked out don't simply say "they hit it too hard" and let it go at that. Your investigation will lead you to use Hayes Posts, designed by engineers for engineers. Hayes has led since 1903 in safety devices for railway side tracks; Bumping Posts, Cushion Wheel Stops and Derails.

Hayes Track Appliance Co.

110 N. 3rd St., Richmond, Indiana

Do you know that every year thousands of plants are made **SAFER MORE COMFORTABLE MORE EFFICIENT**

IRVING GRATINGS

(OPEN STEEL MESH FLOORING)

● WRITE FOR CATALOG

IRVING SUBWAY GRATING CO., INC.
ESTABLISHED 1902
Home Office and Plant: 5063 27th Street
LONG ISLAND CITY 1, NEW YORK
Western Division: Foot of Park Ave.
EMERYVILLE 8, CALIFORNIA

CONTRACTS AWARDED

Ark., Forrest City—DRIVE-IN THEATER—Don Montgomery, Forrest City, drive-in theater, to Tri-State Co., 318 S. 2 St., Memphis, Tenn. Approx. $50,000.

N. M., Eunice—GAS LINES—Gulf Oil Corp., Eunice, 40 mi. 3- to 24-in. natural gas line, and natural gas pipe gathering sys., to Younger Constr. Co., Eunice, $276,000 and $110,400 respectively.

▲ Oklahoma and Missouri — PIPELINES — Shell Pipe Line Corp., Mayor Bldg., Tulsa, Okla., 160 mi. 10 3/4 in. crude oil pipeline between Cushing and Elk City, Okla., and 140 mi. 10 3/4 in. crude oil pipeline from Cushing, Okla. to Emmit, Mo., to Trojan Constr. Co., Inc., El Reno, Okla., $2,700,000 and $3,300,000 respectively. CD 8/9, under Oklahoma.

▲† Oregon and Washington—STEEL TOWERS—Bonneville Power Admin., Box 3537, Portland 8, Ore., steel towers for use at Maupin, Metolius and The Dalles, Ore., and Goldendale, Hanford, Beverly and Coulee City, Wash., to American Bridge Co., Frick Bldg., Pittsburgh, Pa., $2,296,758. Awarded 1/3. CD 12/28, under LB.

▲† California—TUNNEL, etc—Bureau Reclamation, Dpt. Interior, Goleta, Calif., Dec. 29. Tecolote Tunnel and Access Road, Santa Barbara Proj., about 10 mi. west of Santa Barbara, Spec. 2851, from Carl M. Halvorson, Inc., Builders Exchange Bldg., and H. Halvorson, Inc., 5103 N. E. 42 St., both Portland, Ore.; Schedule 1, construction detour road, timber bridge approach fills on Highway 150, training dike, open cut at inlet end of tunnel and tunnel excav. to station 56 plus 50, $563,260 est. $519,410; Schedule 2, excav. tunnel downstream of station 280 plus 07 excav. open cut at outlet end of tunnel and access road to outlet portal, $629,745, est. $544,465; Schedule 3, includes all work on Schedules 1 and 2, plus excav. remainder of tunnel, placing concrete tunnel lining, excavation and lining gate chamber and shaft, access road to top of shaft, structures at outlet end of tunnel and completing training dike, $4,750,455 est. $4,169,525. CD 11/30.

PROPOSED PROJECTS

WATER SUPPLY

Ind., Crown Point—City, City Hall, plans by E. Boyd Phelps, 232 Franklin St., Michigan City, WW $150,000.

La., Farmerville—Town, c/o Town Clk., voted $120,000 bond; WW imprvs. Mallett & Assoc., 416½ E. Amite St., Jackson, Miss., engrs. CD 10/28.

▲ N. D., Minot—City, J. W. Bliss, mgr., Minot, water treatment plant, $1,200,000. Pfeifer & Shultz, 702 Wesley Temple Bldg., Minneapolis, consult. engrs. CD 5/27.

O., Wellington—City, City Hall, water sys., bldgs. and pipeline alterations, storage tanks, elevated tanks at present water works site, $318,000. Floyd G. Brown & Assoc., 27 Marion Bldg., 196 S. Main St., Marion, consult. engrs.

Okla., Bethany—City, 2.7 mi. 16 in. c.i. water supply main, $140,000. V. G. Thompson, 1100 W. Main St., Oklahoma City, consult. engr. CD 12/19/46.

Tex., Childress—City, 500,000 gal. water storage tank, $50,000; two 2 m. ga. pumping units and connections at Baylor Creek Dam, $60,000; water treatment plant, $100,000. D. T. M. Davis, Box 536, Childress, and Joe E. Ward, Wichita Falls, consult. engrs. CD 1/17/49.

Tex., San Angelo—City, bond election Jan. 28, WW sys. rehabilitation, $712,728; c. i. watermains and laterals, $400,000. Freese & Nichols, 407 Dancigar Bldg., Fort Worth, consult. engrs. CD 12/23

Tex., Snyder—City voted bonds, water supply expans., $175,000; water distr. sys., $200,000. James V. Curnutte, Transit Tower, San Antonio, consult. engr. CD 12/7.

Ont., Oshawa—City, W. T. Dempsey, engr., WW, Approx. $210,000.

SEWERS, WASTE DISPOSAL

Ariz., Coolidge—Town, sewage lines, treatment plant, $300,000. Headman, Ferguson & Carollo, 3308 N. 1 St., Phoenix, engrs. CD 12/12/46.

Ariz., Tucson—Pima County Sanitary Dist., expansion sewage sys. $107,000. Headman, Ferguson & Carollo, 3308 N. Third St., Phoenix, engrs. CD 2/1/46.

Calif., Davis—City, City Hall, $50,000 bond election Feb. 28; drainage imprvs.; $260,000 bond election Feb. 28, sewerage sys. L. Cedric Macabee, 156 University Ave., Palo Alto, consult. engr. A. M. McKinnon, City Hall, city engr. CD 6/20/46.

Calif., Dixon—City, City Hall, voted $165,000 bonds sewage disposal sys. CD 1/23/46.

Conn., Newtown—State, Raymond S. Thatcher, comptroller, State Capitol, Hartford, sewage disposal, treatment plant, Fairfield State Hospital, $150,000. Hurley & Capocesalo, 55 Main St., Winsted, consult. engrs.

▲ Fla., Gainesville—City, overall imprvs. and sewerage sys. exten., $1,368,300. Smith & Gillespie, Roberts Bldg., Jacksonville, Zone 1, consult. engrs.

Ind., Crown Point—City, City Hall, sewage plant and sewer lines, $700,000. E. Boyd Phelps, 232 Franklin St., Michigan City, archt. CD 11/20/46.

Ia., Algona—City, City Hall, sewage plant, $300,000. CD 6/4/46.

Ky., South Fort Mitchell (P. O. Covington)—City, City Hall, concrete or vitr. clay sanitary sewerage sys. and disposal plant, $200,000. Maurice Miller, 408 McDowell Bldg., Louisville, engr.

N. Y., Vestal—Town, sanitary sewers, treatment plant, $311,294. CD 8/29/47.

N. D., Minot—City, J. W. Bliss, mgr., Minot, sewage treatment plant, $600,000. Pfeifer & Shultz, 702 Wesley Temple Bldg., Minneapolis, Minn., consult. engrs. CD 5/27, under Water Supply.

Tex., Bartlett—City, voted bonds, sanitary sewer lines, $60,000; sewage plant, $105,000. The Marvin Turner Engineers, Nalle Bldg. Annex, Austin, engrs.

Tex., Prairie View—Prairie View College, Prairie View, sewage treatment plant and master sewerage sys. $100,000. Halle & Assoc., 2801 San Jacinto St., Houston, consult. engrs.

Tex., Snyder—City voted bonds, sewage disposal plant, $175,000; sanitary sewer collection sys., $250,000. James V. Curnutte, Transit Tower, San Antonio, consult. engr. CD 12/7.

Tex., Weslaco—City, voted bonds, sewage disposal, $50,000; storm and sanitary sewers, $50,000. Sigler, Clarke & Winston, Box 428, consult. engrs. CD 11/1.

Ont., Beamsville—Village, H. W. Reid, clk., sewers, Approx. $185,000. CD 9/6.

Ont., Woodstock—Municipality, sewage disposal plant, $100,000.

Que., Jonquiere—Village, P. E. Fortin, secy., sewer constr. Approx. $191,400.

BRIDGES

▲ Illinois—State Dpt. P. Wks. & Buildings, Charles P. Casey, dir., Springfield,

Cass and Schuyler Counties—bridge over Illinois River bridge at Beardstown on Route 67, $2,300,000.

Cook Co.—trestle work on Congress St., C. T. A. temporary trestle, $1,250,000.

Marion Co.—bridge constr. on Route 161 in Centralia subway, $1,250,000.

Peoria Co.—bridge construction on Route U. S. 150 on Illinois River bridge at Peoria, $4,000,000.

Rock Island Co.—bridge and c. conc. Routes 2 and 92 from C. R. I. & P. R. R. separation, near Silvis, $220,000.

Ill., Cicero—Village, Village Hall, bridge alterations, modernization at Laramie over C. B. & Q. R.R. yards, $250,000. De Leuw Cather & Co., 150 N. Wacker St., Zone 6, consult. engrs. CD 3/10/47.

▲ Tex., Houston—Harris Co., Courthouse, bond election Jan. 28, underpass or overpass at intersection sect. of Liberty Rd. and Lockwood Dr. $500,000; concrete steel vehicle bridge across San Jacinto River, $850,000. Howe & Wise, 4119 San Jacinto St., consult. engrs. CD 2/28.

Washington—State Hy. Dpt., Olympia,

Pierce Co.—rebuilding east approach to 11 St. Bridge Tacoma, $700,000. W. A. Bugge, state hy. dir. CD 11/10/48, under Tacoma, Wash., owner changed.

STREETS AND ROADS

Arizona—St. Hy. Dpt., Phoenix.

Gila Co.—realignment U. S. 60 through Globe tieing in with Globe-Miami Freeway, two 36 ft. lanes separated by raised partition, $425,000. W. C. Lefebre, 17 Ave. and Jackson St., Phoenix, state hy. engr.

▲ Illinois—State Dpt. Pub. Wks. & Buildings, Charles P. Casey, dir., Springfield,

Alexander Co.—bit. 1.45 mi. Route 3, north and south of Lake Creek Bridge, $29,000.

Bond Co.—bit. 0.23 mi. Route U. S. 40 and 127 in Greenville, $13,000.

Boone Co.—bit. 5.2 mi. on blacktop road in Belvidere towards Genoa, $55,000.

Brown and Pike Counties—grav. 7.16 mi. FA Route 58 south of Mt. Sterling to Route 105, $280,600.

Bureau Co.—bit. 3.7 mi. Route 92 east of Yorktown, $150,000.

Champaign and Douglas Counties—bit. 16.98 mi. U. S. 45 in Tuscola to University of Illinois Airport, $900,000.

Clark Co.—bit. 2.85 mi. Route U. S. 40 1 mi. east of Marshall to 1 mi. west of Marshall, $125,000.

Clay and Effingham Counties—grav. and bridge 17.5 mi. on blacktop from Wintertown to Clay City, $1,500,000.

Clay and Richland Counties—c. conc. and bridge 8.2 mi. Route 50, 2 mi. west of Clay City to 1 mi. west of Noble, $1,300,000.

Clinton Co.—grav. 4.84 mi. Capital highway from Trenton to New Baden, $244,000.

Cook Co.—bit. 2.1 mi. California Ave. from 35 to 39 Sts., 55 to 67 and 50 Sts., $49,000.

bit. 1.5 mi. Roosevelt Rd. from Austin to Harlem Aves., 60,000.

bit. 0.5 mi. Washington Blvd. from Harlem Ave. to Lathrop St., $20,000.

bit. 2 mi. from 171 St. to east limits of Glenwood, $40,000.

bit. 5.75 mi. Sauk Trail from Dixie Hy. to U. S. 30, $100,000.

bit. 3.9 mi. 127 St. from Route 83 to Western Ave. and from Vincennes to Irving, $73,000.

bit. 2.1 mi. 123 St. and 127 St. from Harlem Ave. to Wabash R.R., $35,000.

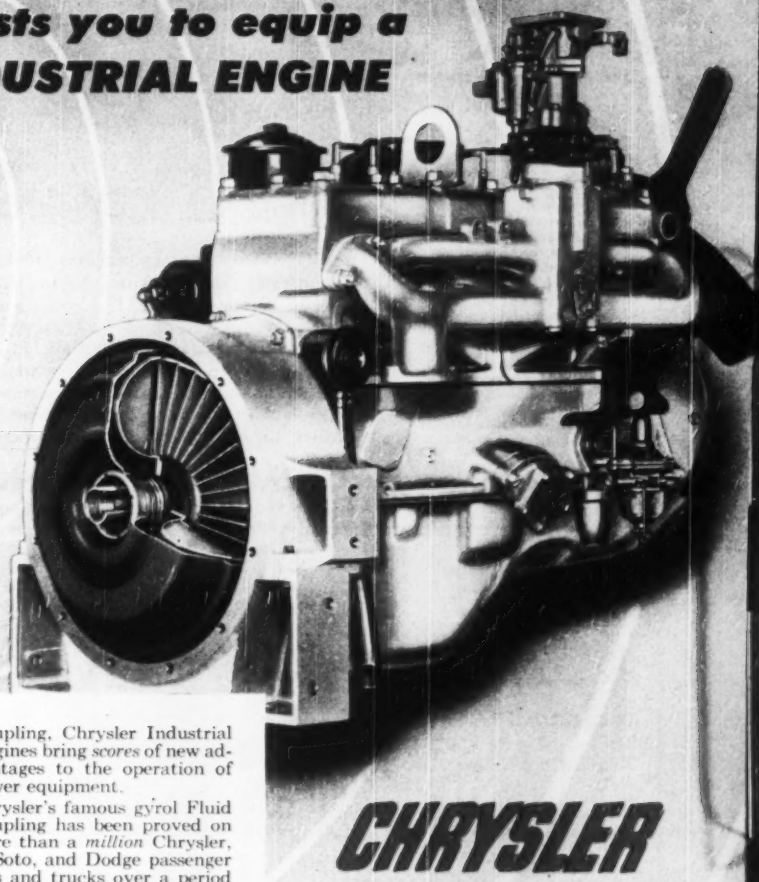
bit. 2.1 mi. 147 St. from Indiana Ave. to Dixie Hy., $25,000.

bit. 0.5 mi. St. Charles Rd. from Mannheim to Eastern, $20,000.

IT'S AMAZING

how little it costs you to equip a CHRYSLER INDUSTRIAL ENGINE with . . .

gýrol Fluid Drive!



Does operation of your equipment require frequent clutching and de-clutching?

Is your equipment subjected to damaging shock loads? Is it desirable to speed up your engine close to torque peak with the output shaft turning at a lower speed?

Do shock loads sometimes stall your engine or cause failure of drive train parts? Would gradual oil-smooth acceleration improve your operation?

If your answer is "yes" to any of these questions, better investigate Chrysler Industrial Engines now! With gýrol Fluid Coupling, Chrysler Industrial Engines bring *scores* of new advantages to the operation of power equipment.

Chrysler's famous gýrol Fluid Coupling has been proved on more than a *million* Chrysler, DeSoto, and Dodge passenger cars and trucks over a period of 11 years. *Proved* on scores of industrial applications.

Its cost is amazingly low! *Actually only a few dollars more than the cost of the conventional flywheel which it replaces!* For more information, see your nearest Chrysler Industrial Engine Dealer, write us, or *mail the coupon today!*

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Industrial Engines and Power Units

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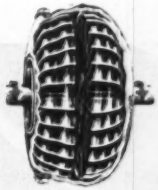

As the driver turns inside the sealed steel drum, the confined oil produces a powerful swirling out-thrust. Instantly the Runner receives the impulsion and transmits smooth power to the load.

G-2

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The above Sauerman machine has worked out perfectly for its owner, paying for itself many times over. *Sauerman can do the same for you* on excavation, strip mining, bulk material handling, etc.! Dig, haul, dump, *all in one operation*, with one man at the controls. Sauerman equipment is flexible, can be readily adapted to meet any new conditions.

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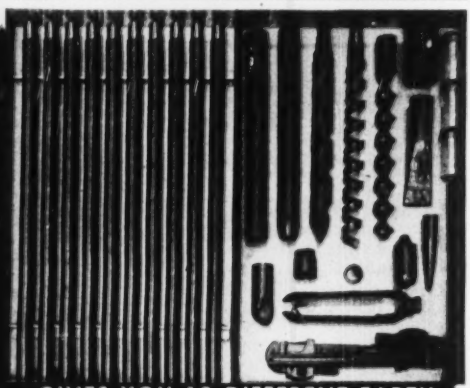

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c, conc, 0.09 mi, Wacker Dr. and Washington St. to Madison, $500,000.
c, conc, and bit, 2.42 mi, on Archer Ave. and 79 St. to Willow Springs Rd., $500,000.
Crawford Co.—bit, 9.44 mi, Route 33 from Robinson west, $334,000.
bit, 1.24 mi, Routes 1 and 33 in Robinson, $73,500.
Cumberland, Shelby and Effingham Counties—bit, 16.12 mi, Route U. S. 45 south of Mattoon to south of Sigel, $552,200.
DeKalb Co.—bit, 9 mi, Alternate Route 30 in De Kalb to Ogle Co. line, $282,000.
De Witt and McLean Counties—bit, 21.69 mi, Routes 48 and U. S. 54 from Weldon to Bellflower, $500,000.
Du Page Co.—c, conc, 2.5 mi, Route 55 from Warrenville Co., to Weisbrook Rd., $389,000.
bit, 8.77 mi, Route 20 from Ontarioville to Route 83, $378,700.
bit, 10.4 mi, Alternate Route 30 from Winfield Rd. to Route 83, $505,700.
bit, 1.1 mi, Route 82 on Butterfield Rd. to Madison St., $75,000.
bit, 2.14 mi, S. A. Route 8 from U. S. 20 toward Bensenville, $81,600.
bit, 7.65 mi, Route 19 from Roselle east to Cook Co. line, $291,000.
bit, 3.6 mi, Route 59 over C. A. & E. R.R. to Route 6, $116,500.
Edgar Co.—c, conc, and bridge 4.94 mi, Route 1 from Route 121 south towards Paris, $550,000.
Edwards Co.—bit, 1.28 mi, Route 15 in Albion, $157,000.
bit, 1.46 mi, Route 15 and 130 in Albion, $98,700.
Effingham Co.—bit, 5.93 mi, Route 37 in Edgewood to north of Mason, $214,700.
bit, 7.86 mi, Route 45 north and south of Effingham, $286,300.
Fayette Co.—c, conc, 2.73 mi, Route 40 in Vandalia east to Route 185, $400,000.
bit, 4.45 mi, Route 37 in Farina to LaClede, $158,000.
Ford Co.—bit, 0.8 mi, Route 9 through Paxton, $30,000.
bit, 1.14 mi, Route 9 in Gibson City, $34,500.
Franklin and Perry Counties—bit, 1.16 mi, Route 14 through bottoms east of Old DuQuoin, $120,000.
Franklin Co.—bit, 1.71 mi, Route 148 through Christopher and south of Christopher, $59,500.
bit, 1.06 mi, Route 37 in Benton, $40,000.
bit, 5.56 mi, Route 37 in Whittington Wye to Benton, $200,000.
bit, 0.7 mi, Route 14 in Benton, $28,000.
c, conc, 2.2 mi, Route 14 in Christopher west, $225,000.
c, conc, and bridge 1.74 mi, Route 34 southwest of Benton, $300,000.
c, conc, and bridge 0.63 mi, Route 149 west of Ziegler, $100,000.
Fulton and Peoria Counties—c, conc, and bridge 16 mi, Routes 9 and U. S. 24 from Barner to Bartonville, $2,777,000.
bit, 10.36 mi, Route 116 from Hanna City to Farmington, $421,600.
Fulton and Schuyler Counties—bit, 2.23 mi, Route U. S. 24 northeast of Rushville, $91,600.
Fulton Co.—bit, 9.45 mi, Route 100 south of Canton to Bryant, $220,400.
bit, 1.53 mi, Route 78 in Canton south, $61,200.
bit, 7.39 mi, Route 9 from Canton to Banner, $498,000.
Greene, Jersey and Macoupin Counties—c, conc, 8.11 mi, F. A. Route 164 from Rockbridge to Medora, $775,000.
Greene Co.—c, conc, and bridge 1.15 mi, on U. S. Route 67 south of Carrollton, $115,000.
Henry Co.—grav, 9.28 mi, Route 17 from Woodhull east towards Galva, $30,000.
Iroquois and Kankakee Counties—bit, 23.5 mi, U. S. Routes 52 and 49 from Kankakee to Route 8, $869,500.
bit, 16.1 mi, Route 1 from Route 17 east of Kankakee south to Route 116, $500,000.
c, conc, 14.6 mi, Route 1 east of Watseka to south of Milford, $1,500,000.
Iroquois Co.—bit, 13 mi, U. S. Route 24 from Gilman to Watseka, $260,000.
Jackson and Union Counties—bit, 1 mi, Route U. S. 51 from Patterson Hill south of Carbondale, $41,000.
Jackson Co.—c, conc, and bridge on Route 3 on grade raise and bridge at Aldrich, $382,000.
c, conc, and bridge 8.58 mi, Route 13 from Murphysboro to Carbondale, $1,560,000.
c, conc, 0.77 mi, Route 43 east and west of Oraville, $75,000.
Jasper Co.—bit, 5.78 mi, Route 33 from Newton east, $235,200.
Jefferson and Franklin Counties—bit, 5.03 mi, Route 37 from Whittington north and south, $183,800.
Jefferson and Hamilton Counties—bit, 14.31 mi, U. S. Route 460 from Mt. Vernon to Dahlgren, $508,500.
Jefferson and Marion Counties—bit, 5.18 mi, Route 37 north and south of Dix, $189,200.
Jefferson Co.—bit, 3.25 mi, Route 37 from Ina to Bonnie, $115,400.
bit, surf, 3.22 mi, Route 37 from north of Mt. Vernon, $116,000.
bit, 6.81 mi, Route 37 from Mt. Vernon to Bonnie, $243,500.
Jersey Co.—bit, 5.81 mi, on Route 16 west of Jerseyville, $222,000.
Johnson Co.—bit, 4.3 mi, Route U. S. 45 north and south of Bloomfield, $155,000.
Kane and DeKalb Counties—bit, shoulder, 19.06 mi, Route 64 from St. Charles to Sycamore, $128,400.
Kane and McHenry Counties—bit, 15.28 mi, Route 31 from Elgin to U. S. Route 14, $467,500.

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TUBE-TURN SEAMLESS WELDING FITTINGS — RANGE OF SIZES

DESCRIPTION	STANDARD WEIGHT	EXTRA STRONG	SCHEDULE 160	DOUBLE EXTRA STRONG	LIGHT GAUGE: NOMINAL PIPE SIZE	LIGHT GAUGE: IRON PIPE SIZE
ELBOWS—90° Long Radius	½"-24"	½"-24"	1"-12"	½"-8"	4"-24"	½"-12"
ELBOWS—90° Short Radius	1"-30"	1½"-30"				
ELBOWS—45° Long Radius	½"-30"	½"-30"	1"-12"	½"-8"	4"-24"	½"-12"
RETURNS—180° Long Radius	½"-24"	½"-24"	1"-12"	2"-8"	4"-24"	½"-12"
RETURNS—180° Short Radius	1"-30"	1½"-30"				
RETURNS—180° Extra Long Radius	1"-2½"	1"-2½"				
TEES—Straight	½"-24"	½"-24"	½"-12"	½"-8"		
TEES—Reducing Outlet	½"-24"	½"-24"	½"-12"	½"-8"		
REDUCERS—Concentric and Eccentric	½"x½"-24"x 20"	½"x½"-24"x 20"	½"x½"-12"x 10"	½"x½"-8"x 6"		
CAPS	½"-24"	½"-24"	1"-12"	1"-8"		
STUB ENDS—Lap Joint	½"-24"	½"-24"				
SADDLES	2"-24"**					
LATERALS—Straight	1"-24"	1"-24"				
LATERALS—Reducing on run	1"-24"	1"-24"				
CROSSES—Straight and Reducing	½"-16"	½"-24"				
RINGS—Welding Slope Type	½"-24"	1"-24"		1"-8"		
RINGS—Welding Rider Type	½"-12"	½"-12"				
SLEEVES—Welding	2"-24"**					

** Since saddles and sleeves are for external reinforcement only, they do not conform to iron pipe size thicknesses.

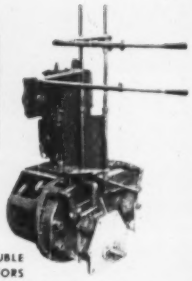
TUBE-TURN FORGED STEEL FLANGES — RANGE OF SIZES

DESCRIPTION	150 LB.	300 LB.	400 LB.	600 LB.	900 LB.	1500 LB.	2500 LB.
WELDING NECK	½"-24"	½"-24"	½"-24"*	½"-24"	½"-24"	½"-24"	½"-12"
SLIP-ON	½"-24"	½"-24"	½"-24"*	½"-24"	½"-24"*	½"-24"	½"-12"
LAP JOINT	½"-24"	½"-24"	½"-24"*	½"-24"	½"-24"*	½"-24"	½"-12"
THREADED	½"-24"	½"-24"	½"-24"*	½"-24"	½"-24"*	½"-12"	½"-12"
BLIND	½"-24"	½"-24"	½"-24"*	½"-24"	½"-24"*	½"-24"	½"-12"
SOCKET TYPE	¼"-24"	¼"-4"	¼"-3½"*	¼"-3½"			
REDUCING—Threaded or Slip On	½"-24"	½"-24"	½"-24"*	½"-24"	½"-24"*	½"-12"	½"-12"
ORIFICE—Threaded		1"-24"	4"-12"	4"-12"	3"-12"	1"-12"	
ORIFICE—Slip On		1"-24"					
ORIFICE—Welding Neck		1"-24"	4"-12"	3"-12"	3"-12"	1"-12"	

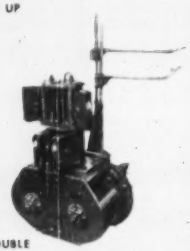
* Dimensions on sizes thru 3½" same as for 600 lb. flanges.
* Dimensions on sizes thru 2½" same as for 1500 lb. flanges.

In addition to carbon steel welding fittings and flanges listed here, the complete Tube-Turn line embraces many other metals and alloys—types 304, 347, and 316 stainless steel, carbon moly and chrome moly steels, copper, aluminum, brass, Monel Metal, Inconel, nickel, wrought iron. Ask your Tube-Turn distributor for catalogs and other reference material.

3 New POWER CONTROL UNITS ...by KAY-BRUNNER



MODEL C-90D DOUBLE DRUM. FOR TRACTORS OF 50 H.P. AND UP



MODEL C-50D DOUBLE DRUM. FOR TRACTORS UP TO 50 H.P.

MODEL C-50S SINGLE DRUM. FOR TRACTORS UP TO 50 H.P.

These Power Control Units, for any crawler tractor, are designed and built especially for cable control work. They have a generous surplus of power, are tremendously rugged in construction, easy to operate and simple to service.

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bit. 4.4 mi. Route 31 through South Elgin to Wing St. in Elgin, $177,700.
Kankakee Co.—bit. 6.23 mi. Route 17 from Route 1 to Kankakee, $193,000.
bit. shoulders 9.4 mi. Route 113 S from Kankakee to Will Co. line, $75,200.
bit. 18.07 mi. Route 17 from Kankakee to Reddick, $560,200.
c. conc. and bridge 13.8 mi. Route U. S. 45 from Kankakee belt line and south of Chebanse, $3,500,000.
Knox and Henry Counties—bit. 10.34 mi. on Route U. S. 34 from Galva to south of Altona, $517,200.
Knox and Warren Counties—bit. 9.99 mi. Route U. S. 34 from Galesburg west, $404,400.
Knox Co.—grav. 4.67 mi. Routes 97 and 8 from junction of Route 91 to south of Gilson, $20,000.
Lake Co.—bit. 9.72 mi. Routes 21 and 83 from Grayslake to Route 173 $359,300.
bit. 4.08 mi. Route 83 from Ivanhoe to Route 21., $153,000.
LaSalle Co.—bit. 0.62 mi. Route U. S. 6 from Brewry Hill west of Ottawa, $55,000.
c. conc. 1.4 mi. Route U. S. 6 from Ottawa west, $262,000.
Lawrence Co.—bit. 4.92 mi. Route 1 from Lawrenceville south $172,200.
Lee and LaSalle Counties—bit. 9.11 mi. Route U. S. 51 from north of junction of Routes 2 and 70 towards Compton, $384,000.
Lee and Ogle Counties—bit. 5.81 mi. Route 2 from Dixon to north of Grand Detour, $244,000.
Lee and Whiteside Counties—c. conc. and bridge 8 mi. Alternate U. S. Route 30, from Sterling to Dixon, $806,000.
Lee Co.—bit. 3.43 mi. Route U. S. 51 north and south of Compton, $144,000.
bit. 3.2 mi. Route U. S. 52 from north of U. S. 30 to Amboy, $130,000.
bit. 7.27 mi. Route U. S. 52 from Amboy to Sublette, $307,000.
Livingston Co.—c. conc. 1 mi. Route U. S. 66 from Dwight northeast, $100,000.
c. conc. and bridge 0.51 mi. on Route 17 in and west of Dwight, $110,000.
Logan Co.—bit. 0.31 mi. Route U. S. 66 from S and Logan Sts. in Lincoln, $20,000.
Macon and Sangamon Counties—bit. 17.9 mi. Route U. S. 36 from Dawson to Harristown, $737,000.
Macoupin Co.—c. conc. and bit. 2.3 mi. Route 4 through and south of Gillespie, $362,000.
Madison Co.—c. conc. and bridge 0.4 mi. Route 159 from west of Edwardsville, $100,000.
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bit. 1.57 mi. Route 159 in Wood River and Roxana, $61,000.
bit. 0.4 mi. Route 159 from south of Edwardsville, $17,000.
bit. 9.94 mi. Route U.S. 40 east and west of Troy, $109,000.
bit. 0.69 mi. Route U.S. 66 in Nameoki, $11,000.
bit. 21.86 mi. Route 140 east of Alton to Alhambra, $845,000.
bit. 9.03 mi. Route U.S. 67 south of Route 109 to north of Alton, $345,000.
bit. 2.25 mi. Route U.S. 67 north of Godfrey, $86,000.
Marshall and Peoria Counties—c. conc. and bridge 4.2 mi. Route 29 south of Sparland to north of Chillicothe, $606,000.
McHenry and Boone Counties—bit. 15.39 mi. Route U.S. 20 from Marengo to Winnebago Co. line, $588,300.
McHenry Co.—bit. 0.75 mi. Route 173 from Harvard east, $30,000.
bit. 14.89 mi. U.S. Route 14 from Woodstock toward Crystal Lake, $563,000.
bit. shoulders 3.2 mi. Route U.S. 14 north of Harvard, $22,000.
McLean, Tazewell and Woodford Counties—bit. 18.28 mi. Route U.S. 150 from Morton to east of Goodfield, $1,043,200.
McLean and Woodford Counties—bit. 11.65 mi. U.S. Route 150 east of Goodfield towards Bloomington, $773,200.
McLean Co.—bit. .95 mi. on city U.S. Route 66 from Morris Ave.-Bloomington to Route 66, $29,500.
bit. 2.68 mi. city Route 66 from Normal to Route U.S. 66, $83,100.
bit. 1.62 mi. Route 66 from Service Drives southwest of Bloomington, $19,400.
Menard Co.—c. conc. and bridge 1.17 mi. Routes 97 and 123 from south of Petersburg, $225,000.
Morgan and Scott Counties—bit. 8.57 mi. U.S. Route 67 from Greene Co. line to Woodson, $672,500.
Moultrie Co.—bit. 10.98 mi. Routes 32 and 121 from Sullivan to Windsor, $285,000.
Ogle and Winnebago Counties—bit. 22.6 mi. Route 2 north of Grand Detour to south of Rockford, $1,150,000.
Ogle Co.—bit. 4.48 mi. Route U.S. 51 from junction Route 77 east of Kings, north, $182,000.
bit. 5.89 mi. Route U.S. 51 from Ogle-Winnebago Co. line, south, $239,000.
bit. 0.60 mi. Route 72 from junction Route 70 easterly, $24,000.
Peoria Co.—bit. 14.78 mi. Route 88 north of Peoria to junction with Route 90 south of Edelstein, $598,400.
bit. 8.32 mi. Route 91 from junction of Route U.S. 150 to junction of Route 90, $438,000.
bit. 2.5 mi. Route 150 and junction of Route 30 westerly, $102,400.
c. conc. 1.79 mi. Route 88 from Knoxville Ave. in Peoria from Glen to Corrington, $585,000.
c. conc. 1 mi. Route 88 from Knoxville Ave. in Peoria from Glen Ave. north, $263,000.
Perry Co.—bit. 0.25 mi. on Route U.S. 51 from south Washington St. in DuQuoin, $10,000.

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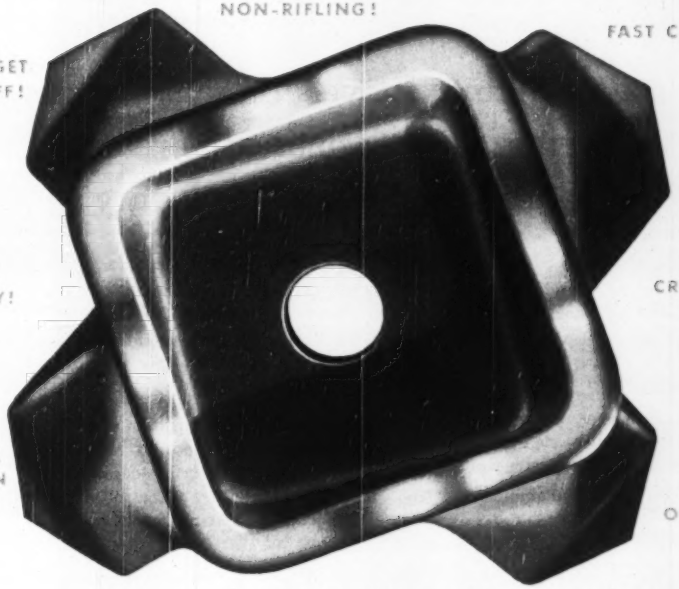
NEW "SPIRALOCK" BIT GIVES YOU ALL THESE ADVANTAGES:



A NEW one-use rock bit developed by The Timken Roller Bearing Company offers you special advantages that can't be equalled by any other one-use bit. It's the revolutionary Timken® one-use "Spiralock" bit!

The new bit has a unique "Spiralock" union—a square socket that spirals slightly as it recedes. The superiority of this union has been proved under actual on-the-job conditions.

The bit stays on dependably in the hole. Yet it's easier to get on and off. Just a few blows of the drill and it's on; just a few blows of a hammer and it's off. Steels last much longer, are easier to prepare and recondition. Existing drill steels of any size and section can be adapted easily and quickly.

Other great advantages of the new bit are: Fast-cutting design. Crowned chisel pilot for easier starting and "collaring." "X" cutting edge that prevents rifling in any ground. Non-choking back face, scalloped and rounded off to prevent chips packing behind the bit. And because it's made of Timken electric furnace steel, the "Spiralock" bit has a long life.

The new one-use "Spiralock" bit—designed for drilling jobs where bit reconditioning is impractical or undesirable—is the latest addition to the Timken rock bit line, which includes the famous threaded multi-use bit and threaded carbide insert bit. And Timken is the only company that offers you *all three* types.

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NEW RPM DELO OILS
cut engine wear-rate up to 85%

New RPM DELO Lubricating Oils contain advanced, special compounding. Proved in actual operation, they keep engines cleaner, increase protection and extend overhaul periods of all heavy-duty engines.

Cut liner wear rate up to 85%. In service under extreme operation conditions, these new RPM DELO Oils reduced wear-rates up to 85% over conventional heavy-duty type lubricants.

Reduced engine deposits as much as 75%. Superior compounding in new RPM DELO Oils kept top-ring grooves, oil rings, and skirt areas of pistons remarkably clean in high-temperature, high-output truck and tractor engines.

Saved 40% to 60% on maintenance. Records show that new RPM DELO Oils cut maintenance costs as much as 60%, reduced oil consumption 30% to 50% over the long run.

Proved in full range of engine service. This new line covers normal to extremely severe conditions. The grade that meets your needs will double protection against lubrication failures, give you all-around better engine performance.

RPM DELO Heavy Duty Lubricating Oil
A new, high quality-level compounded oil recommended for heavy-duty diesel or gasoline engines in normal to difficult service. (Meets U. S. Army Specification 2-104B.)

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Highest quality-level oil, designed for extremely severe operating conditions. (Meets U. S. Army Specification 2-104B, Supplemental List No. 2, also the rigid requirements of Caterpillar Tractor Company's Superior Lubricants—Series 2.)

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Pope and Saline Counties—c. conc. 22.2 mi. Route FA 163 from Mitchellsville to Dixon Springs. $1,240,000.

Pope Co.—bit. 10.32 mi. Route 156 from Golconda north. $30,000.

Pulaski Co.—bit. 0.67 mi. Route 37 from National Cemetery to Mount City. $24,000.

bit. surf. 2.14 mi. on Route 37 from north of Mount City. $66,000.

c. conc. 1.95 mi. Route 37 from Hodges, Bayou relocation southwest of Olmstead. $175,000.

Randolph Co.—bit. 13.82 mi. Route 3 from Red Bud to Waterloo. $500,000.

Richland Co.—bit. 6.32 mi. Route 130 from north of Olney. $500,000.

Saline Co.—bit. 0.9 mi. on Routes 13 and 34 in Harrisburg. $36,000.

Sangamon Co.—c. conc. 5.2 mi. on Route U. S. 66 south of Lake Springfield south to Lake Springfield bridge. $620,000.

c. conc. 5. 3 mi. on Route U. S. 36 from Curran to New Berlin. $600,000.

bit. 3.26 mi. Route U. S. 66 north of Hazel Dell Rd. to Lake Springfield bridge. $130,000.

St. Clair, Clinton and Washington Counties—bit. 10.83 mi. Route 15 east of Mascoutah to west of Venedy Station. $218,000.

St. Clair Co.—bit. 10.98 mi. Route U. S. 50 west of Lebanon to west of Fairview. $417,000.

bit. 2. 9 mi. old Route U. S. 50 from junction of new Route U. S. 50 west. $60,000.

bit. 1.89 mi. Route 157 south of Edgemont to French Village. $51,000.

Stephenson Co.—bit. 0.43 mi. Route 26 from southeast of city limits of Freeport to belt line. $63,000.

Tazewell Co.—bit. 1.92 mi. Route 9 from Court St. in Pekin. $113,000.

Union Co.—bit. 2.79 mi. Route 3 from Aldridge to Wolf Lake. $100,000.

bit. 2.67 mi. Route 3 from Ware south. $115,000.

bit. 3.66 mi. U. S. Route 51 from north and south of Cobden. $17,000.

Wabash Co.—bit 11.41 mi. Route 1 from Mt. Carmel to Lawrence Co. line. $405,200.

Warren Co.—grav. 4.65 mi. Route 164 from Monmouth west. $15,000.

White Co.—bit. 7.9 mi. Route U. S. 460 from Carmi to Enfield. $288,000.

White and Hamilton Counties—bit. 18.25 mi. Route U. S. 460 from Enfield to west of McLeansboro. $660,000.

White Co.—bit. 7.9 on Route U. S. 460 from Carmi to Enfield. $288,000.

Whiteside and Ogle Counties—bit. on blacktop resurf. 12.55 mi. from Route 6 at Sterling to Route 26 south of Polo. $293,500.

Will and Cook Counties—c. conc. 8.21 mi. Route 1 at Goodenow to U. S. 30 east of Chicago Heights. $2,300,000.

Will Co.—bit. 9.63 mi. Alternate 66 from south of Ordnance plant to Grundy Co. line. $363,400.

bit. 0.7 mi. Alternate 66 from Chicago St. in Joliet. $33,000.

bit. 3 mi. U. S. Route 45 from Cook Co. line to U. S. Route 30. $98,400.

bit. 6.69 mi. Route U. S. 6 from Cook Co. line west and Washington Street in Joliet. $216,900.

bit. 4.97 mi. Route U. S. 52 from Joliet to Route 59. $159,900.

bit. 8.75 mi. Route U. S. 66 from Plainfield to Birds bridge overhead. $274,000.

bit. 21.27 mi. Route U. S. 52 from Kankakee Co. line to Joliet. $800,700.

bit. 6. 58 mi. Route U. S. 54 from Cook Co. line southerly. $286,400.

bit. 1.08 mi. Route 4A in Lockport. $11,400.

grav. 5.74 mi. Route 113N from S. A. Route 7 to Wilmington. $81,400.

grav. 3.14 mi. Route U. S. 30 from east and west of New Lennox. $35,500.

c. conc. 11.6 mi. U. S. Route 30 from Joliet to Cook Co. line. $2,000,000.

Williamson Co.—bit. 6.46 mi. on present Route 13 from Marion to east of Crab Orchard. $470,000.

c. conc. and bridge 0.74 mi. Route 37 from Mo. Pacific Railroad separation south of Johnston City. $300,000.

c. conc. and bridge 10 mi. Route 13 relocation from Carterville to Marion. $1,000,000.

bit. 1 mi. Route 148 from Herrin Wye north. $36,000.

bit. 1.9 mi. Route 149 from north of Hurst north to couty line. $78,000.

bit. 0.48 mi. SA 10 from Route 13 to Carterville. $24,500.

Winnebago Co.—c. conc. 6.02 mi. Route U. S. 51 from Rockford south to Ogle Co. line. $1,080,000.

Woodword Co.—bit. 0.42 mi. Route U. S. 51 in Minonk. $13,000.

bit. 12.37 mi. Route U. S. 24 from Eureka to El Paso. $500,200.

bit. 1.3 mi. Route 117 from Eureka north. $53,800.

bit. 7.88 mi. Route 116 from Metamora toward East Peoria. $321,200.

Mont. Deer Lodge—City, City Hall. $40,000 bond election Jan. 13. street paving. $156,000.

Nebraska—State Dpt. Roads & Irrigation and City of South Sioux City, Lincoln, paving, widn. hy. within city limitns. $142,000. F. H. Klietsch, Lincoln, state engr. CD 7/22/43.

Nebraska—State Dpt. Roads & Irrigation Lincoln, and City of Omaha, 18 and Farney Sts., Omaha, Railroad Ave. construction from U St. southeast to county line, providing better inlet and outlet for this main state hy. to the south. $500,000. F. H. Klietsch, c/o State Dpt. Roads & Irrigation, state engr.

▲ **N. Y., New York**—President Manhattan Boro, Municipal Bldg. redevelopment of 42 St. from 1 to 2 Aves. for approach to U. N. Development. $1,848,000. Andrews & Clark, 305 E. 63 St., Zone 21, consult. engrs.

Okla., Miami—City, voted bonds, access hy. $250,000. Hudgins, Thompson & Ball, W. Main St., Oklahoma City, consult. engrs.

Tex., Hallettsville—Lavaca Co., Hallettsville voted bonds, 5 mi. farm-to-market road constr. $110,000. CD 12/6.

▲ **Tex., Houston**—Harris Co., Courthouse, bond election Jan. 28. 12.69 mi. Atascocito Road constr. and paving, $650,000, Howe & Wise, 4119 San Jacinto St., consult. engrs. CD 2/23; special road constr. and surf. in Precinct 4, $300,000, Hugo Zapp, c/o owner, co. engr.; construct approach roads or by-pass roads in vicinity Washburn Tunnel (Pasadena Tunnel), $1,500,000, Palmer & Baker, Pasadena, consult. engrs. CD 8/28/47.

Tex., Pearsall—Frio Co., Courthouse, voted bonds, Road Dist. 1 road imprvs. $200,000. CD 11/23.

Tex., Snyder—City, voted bonds, street imprvs. and asph. paving. $275,000. James V. Curnutte, Transit Tower, San Antonio, consult. engr. CD 12/7.

▲ **Alta., Edmonton**—Municipality, concrete arterial road paving. $1,500,000 voted. J. C. Haddon, City Hall, city engr.

EARTHWORK, WATERWAYS

▲ **Texas**—Brazos River Conservation & Reclamation Dist., Mineral Wells, Seymour Dam, water conservation, Haskell and Stonewall Counties. $6,000,000; water conservation dam on Clear Fork of Brazos River, near Nugent, Jones Co., $3,800,000.

AIRPORTS AND AIRBASES

Tex., Snyder—AIRPORT—Scurry Co., Synder, airport. $150,000. Ash-Wilson Engineering Service, Snyder, consult. engrs.

LATIN AMERICA

Mexico, Monterrey—Asociacion de Citricultores de Nuevo Leon, Domicilio conocido, Monterrey, N. L. Mexico, plans orange juice refrigeration plant. $200,000.

Mexico, San Andres Tuxtla—Mexican Govt., Sria. de R. H., Balderas, 94, Mexico, D. F., plans WW, sewerage. $250,000.

Mexico, Tehuantepec—State Govt., Palacio del Estado (Trg. Fernando Carreon) Oaxaca, Oax., Mexico, plans WW, sewerage, paving. $250,000.

Venezuela, Caracas—Republic of Venezuela, Caracas, plans bonded warehouse, $298,500 voted. Dpt. P. Wks., Caracas, engr.

PUBLIC BUILDINGS

▲ **Ariz., Phoenix**—HOUSING—Phoenix Housing Auth., 1301 S. 3 St., 1,065 housing units on 4 sites. $6,000,000.

Calif., Azusa—SCHOOL FACILITIES—City School Dist., 340 W. 5 St., $250,000 bond election Feb. 7, school facilities.

▲ **Calif., Calexico**—HIGH SCHOOL—Calexico High School Dist., Calexico, Calexico High School, administration unit, library shop bldg., cafeteria gymnasium, 2 classroom units. $1,000,000. Bowen, Rule & Bowen, 2835 Gilroy St., Los Angeles, consult. engrs.

▲ **Calif., Stockton**—LIBRARY—City, City Hall, library. $1,500,000. CD 2/8/45.

Conn., Danbury—HOUSING—City, Danbury Housing Auth., Danbury, 110 family units Brewster-Danbury Rd. $950,000.

Conn., Manchester—SCHOOL—Town Bd. Educ., Manchester, plans by Keith Sellars Heine, 71 Oxford St., Hartford, 2 story, bsmnt., brick, steel 18 room school, Broad St. $650,000. CD 3/29.

Conn., Middletown—HOUSING—City, Middletown Housing Auth., Louis W. Johnson, exec. dir., plans by Sebastian J. Passanesi, 164 Court St., 50 family units, Long Lane and Wadsworth St. $450,000. CD 11/1.

▲ **Conn., New London**—SCHOOLS—City Bd. Educ., Municipal Bldg., brick, steel 16 room Nemaug School addn. and gymnasium, $450,000; 2 story, bsmnt., 16 classroom Bartlett School addn., alterations, incl. removal 3rd story $500,000; brick, steel Central High School, $1,000,000.

▲ **Conn., Waterbury**—SHOOLS—City Bd. Educ., 271 E. Main St., plans by Francis L. S. Mayers, 2 W. 47 St., New York, N. Y., brick, steel Chase School addn., $250,000; replacement Scrague School or addn., $300,000; plans by Alexander & Nichols, 77 Bank St., 2 story, bsmnt., brick, steel Hopeville School addn., $250,000; brick, steel high school, $1,000,000. CD 3/20/47.

Del., Newark — DORMITORY — University of Delaware, Newark, plans by E. Wm. Martin, 30 West St., Wilmington, girl's dormitory, $500,000. CD 3/11/46.

Fla., Key West—HOUSING—Key West Housing Auth., Key West, 170 housing units. Approx. $500,000.

Fla., Marianna—SANITORIUM—Florida State Tuberculosis Bd., Tallahassee, plans by Guy Fulton Assoc., state archts., Tallahassee, tuberculosis hospital sanitorium, on 80 acre tract near here. Approx. $250,000.

Fla., Orlando—HOSPITAL—State Imprvt. Comn., Tallahassee, plans by Guy C. Fulton & Assoc., state archts., Tallahassee, 75 bed addn. and psychiatric unit at Orange Memorial Hospital, Kuhl Ave. $900,000. CD 8/27/45.

▲ **Fla., Santa Rosa Island**—HOUSING—Santa Rosa Housing Auth., Santa Rosa Island, plans by R. G. Patterson, 615 S. Palafox St., Pensacola, and bids soon housing and utilities. $1,200,000.

▲ **Ga., Americus**—HOUSING—Americus Housing Auth., Americus, plans by Abreu & Robeson, 22 Marietta St. Bldg., Atlanta, 150 low rental housing units. Approx 1,000,000.

▲ **Ga., Macon**—HOUSING—Macon Housing Auth., George Markwalter, dir., Macon, 750 housing units. $3,750,000.

▲ **Ia., Council Bluffs**—SCHOOL—Independent School Dist., Council Bluffs, plans by G. B. Larson, 305 W. Broadway, school, McMillen and 2 Ave., $615,000; school, Washington and 8 Sts., $485,000.

Ia., Harlan—HOSPITAL—Shelby Co., voted $200,000 bonds Dec. 6, hospital, $300,000. CD 4/7/47.

Ia., Morrison—HIGH SCHOOL—Bd. City Directors, plans by R. A. Horn, Rock Island, Ill., high school. $650,000.

Ia., Oskaloosa—SCHOOL—Bd. Educ., defeated $735,000 bonds, high school. $650,000. CD 12/15.

Kan., Osawatomie—HOSPITAL—State Bd. Social Welfare, 801 Harrison St., Topeka, plans by C. L. Marshall, state archt., 2021 Clay St., Topeka, patient's bldg. at State Hospital. $300,000.

Kan., Wichita—ADMINISTRATION—Municipal University of Wichita, 1845 Fairmount St., plans by W. I. Fisher, Central Bldg., business admin. bldg. $280,000. CD 8/21/45.

Md., Baltimore—SCHOOL—City, Bureau Bldg. Constr., 410 Municipal Bldg.; plans by Finney, Wolcott & Assoc., 10 W. 25 St., 1 story, part bsmnt., 1,056,000 cu. ft., masonry, concrete, steel, limestone, Armistead Gardens Elementary School. $975,000. James K. Wolford, 2441 N. Charles St., mech. engr. Frank Fahm, Jr., 3006 Iona Terrace, structural engr. CD 2/7/45.

Md., Baltimore—ARMORY—U.S. Gov't., Dpt. Army, The Pentagon, Wash. 25, D. C., 2 story, bsmnt., 260x380 ft. brick, concrete, steel, armory. $458,000. Post Eng. Office, Post Office Bldg., staff engr.

Md., Elkton—SCHOOL—Cecil Co., Bd Educ, County Court House, plans by Finney, Wolcott & Assoc, 10 W. 25 St., Baltimore, 1 story, 450,000 cu. ft. irregular shaped, stone, concrete, steel, Junior-Senior High School. $450,000. Jas. K. Wolford, 2441 N. Charles St., Baltimore, mech. engr. Frank Fann, Jr., 3006 Iona Terrace, Baltimore, structural engrs. CD 5/9.

Mass., West Springfield—SCHOOL—Town, Lester Lamothe, chn. School Bldg. Comn., plans by Westcott & Mayers, Inc., 109 Church St., New Haven, Comn., 2 story, bsmnt., brick, steel school, Memorial Ave. $250,000.

▲ **+Mich., Detroit**—HOSPITAL—Pub. Bldgs. Admin., 18 and F Sts. N.W., Wash. 25, D. C., Marine Hospital addn., 14639 Riverside Dr. $14,500,000. CD 11/5/45.

Mich., Litchfield—HOSPITAL—Meeker Co., R. Werner, ch. Bd. County Comrs., Darwin, plans by Magney, Tusler & Setter, 202 Foshay Tower, Minneapolis, county hospital. Former project abandoned. CD 12/1, giving Litchfield Hospital Assn. as owner.

▲ **N. C., Greensboro**—BUILDINGS—Agricultural & Technical College, c/o McMinn & Norfleet and Albert C. Woodmof, N. Green St., library, $980,000; gymnasium, $635,600; trades bldg. addn., $600,000; new trades bldg., $450,000; dairy plant, $140,000.

O., Athens—HEATING PLANT—State Dpt. P. Welfare, State Office Bldg., Columbus, heating plant at Athens State Hospital. $230,000. Wm. C. Kammerer & Assoc., 1900 Euclid Ave., Cleveland, consult. engrs.

▲ **O., Cincinnati**—RESIDENCES—The Cincinnati Metropolitan Auth., Ramsey Findlater, mgr., 959 Armory Ave., 28 two story, bsmnt., brick or frame residences. $22,900,000.

▲ **O., Hamilton** — HOUSING — Hamilton Metropolitan Auth., Mrs. Evelyn Welliver in charge, 1005 S. Front St., 300 one and two story brick family units, concrete bsmnt., garages. $3,000,000.

Okla., Stillwater—SCHOOL—Bd. Educ., Stillwater, voted bonds, school, $272,000. Phillip A. Wilber, Stillwater, archt. CD 12/7.

Pa., Mansfield—DORMITORY—General State Auth., 18 and Herr Sts., Harrisburg, plans by Thomas K. Hendryx, Bradford, men's dormitory at Mansfield State Teachers College. $399,000. A. F. Jones, c/o owner, ch. engr. CD 12/12.

Tenn., Martin—DORMITORY—State of Tennessee, Nashville, plans by D. T. McGown, 81 Madison Bldg., Memphis, dormitory at Martin Junior College. Approx. $250,000. CD 1/17/47.

▲ **Tex., Beaumont**—HOUSING—Beaumont Housing Auth., Beaumont, plans by Stone & Pitts, Calder Ave., 500 low-rental housing units. $4,375,000. CD 9/23.

Tex., Corpus Christi—POLICE, etc.—City voted bonds, police building and jail, $250,000. CD 12/7.

Tex., Corpus Christi—LIBRARY—City voted bonds, library, $350,000. CD 12/7.

▲ **Tex., Galveston**—COURTHOUSE, etc.—Galveston Co., Galveston, defeated bonds Dec. 17, courthouse and jail. $2,200,000. H. Voelcker & Assoc., 1202 Dennis St., archt. CD 11/25.

Tex., Galveston—HOSPITAL—University of Texas School of Medicine, 915 Strand St., plans by Mark Lemmon, consult. archt., 1210½ Main St., Dallas, and Kenneth Franzheim, 2306 Crawford St., Houston, Ziegler Tuberculosis Hospital unit, $300,000. CD 1/19.

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Tex., Gladewater—HOSPITAL—City, voted bonds, hospital. $500,000.

▲ Tex., Houston—HOSPITAL—City, City Hall, 900 Brazos St. and Harris Co., Courthouse, $1,500,000 bond election Jan. 28, charity hospital. $7,500,000. Alfred C. Finn, Bankers Mortgage Bldg., archts. H. E. Maddox & C. E. Johnson, 3501 Buffalo Dr., assoc. archts. CD 8/16.

▲ Tex., Houston—POLICE STATION, etc.—City, City Hall, 900 Brazos St., $1,500,000 bond election Jan. 28, central police station and jail. $2,850,000. Kenneth Franzheim, 2306 Crawford St., archt. CD 6/15/44.

Tex., Katy—SCHOOL, etc.—Katy Independent School Dist., Katy, plans by Emory S. White, M & M Bldg., Houston, brick, hollow tile, concrete, steel school and cafeteria. $450,000 bonds voted.

Tex., Levelland—GYMNASIUM, SCHOOL, etc.—Levelland Independent School Dist., Levelland, plans by Alvin Gearley & Senne, Levelland, structural steel frame, brick gymnasium and auditorium, concrete slab fdn., $250,000; brick school, concrete frame and fdn. $250,000.

Tex., Lubbock—AGRICULTURAL—Texas Technological College, Lubbock, plans by Haynes & Kirby, 19 St. and Dixie Dr., and Wyatt C. Hedrick, consult. archt., 1005 1st National Bank Bldg., Fort Worth, agricultural group. $550,000. CD 12/20.

▲ Tex., Ysleta—SCHOOLS—Ysleta Independent School Dist., Ysleta, bond election Jan. 28, Ysleta Grammar school addn., stadium addn., $275,000; Cadwalltader School, and North Loop area gymnasium, $250,000; Junior High School $250,000; Ascarate Area school addn., $275,000. CD 12/20.

W. Va., Wheeling—HOUSING—Wheeling Housing Auth., Bd. Trade Bldg., plans by Frederick Faris, 1117 Chapline St., 38 unit brick on tile housing, $280,000.

▲ N. S., Halifax—OFFICE—Acting Secy. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., plans by Duffus & Romans, Barrington St., and G. Brault, c/o owner, 13 story in rear and 11 story, in front 124x188 ft., steel frame, rein.-con., office building, Hollis St. Approx. $2,500,000.

Ont., Collins Bay—HOUSING—Kingston Twp., A. M. Smith, clk., R.R. 1, Collins Bay, housing on 46 acres of land. $600,000.

Ont., Fort Frances—HOME—District of Rainy River Bd. Management, S. L. Wall, secy., plans by Rounthwaite & Fairfield, 32 Harbord St., Toronto, rein.-con. masonry home for aged, concrete fdns., Home St. and Christie Ave. Approx. $250,000.

Ont., Kincardine—SCHOOL—Bd. Educ., Kincardine, ratepayers defeat project, school. $250,000. CD 10/31.

Ont., Markdale—HIGH SCHOOL—High School Bd., Mrd. E. Gould, secy., plans by Shore & Moffat, 79 Queen St. E., Toronto, high school to serve Markdale and district. Approx. $275,000.

▲ Ont., Ottawa—LABORATORY—J. M. Somerville, secy. Dpt. P. Wks., Hunter Bldg., plans by W. E. Noffke, 46 Elgin St. and G. Brault, c/o owner, one section 3 story, bsmnt. and other sections 1 story, 385x365 ft., concrete bar joist forest laboratory bldg., Booth St. Approx. $1,500,000.

Que., St. Croix—SCHOOL—Province of Quebec, Dpt. Agriculture, Quebec City, Agricultural School. $250,000.

COMMERCIAL BUILDINGS

▲ Fla., Tallahassee—HOTEL—Mangham-Butler, Inc., 3128 Coral Way, Miami, modern 125 room hotel and business block. $1,100,000.

▲ Ga., Atlanta—APARTMENT—Long Corp., King and Mount Pleasant Sts., Charleston, S. C., plans by William G. Lyles, Bissett, Carlisle & Wolff, 1302 Main St., Columbia, S. C., apartment. $5,000,000.

Ill., Blue Island—CHURCH—First Evangelical Lutheran Church, 2537 W. Grove St., plans by Wm. P. Whitney, 1959 N. Lincoln Ave., Chicago, Zone 18, church. $250,000.

Ill., Chicago—OFFICE—National Safety Council, 20 N. Wacker St., Zone 6, plans by Naess & Murphy, 80 E. Jackson St., Zone 4, remodel entire 5th floor, 60,000 sq. ft., of Mandel-Lear Bldg., 179 E. N. Water St., $250,000.

Ill., Chicago—DORMITORY, etc.—New York, Chicago & St. Louis R.R., H. F. Whitmore, ch. engr., Terminal Bldg., Cleveland, O., church, steel, concrete brick dormitory and office at freight terminal yards 103 and Constance Sts. $300,000.

Ill., Chicago—APARTMENT—Owner, c/o Alexander & Brandt, archts., 22 W. Monroe St., Zone 3, 52 unit, three story, bsmnt., brick, English apartment, 105 St. and S. Hale Ave. $260,000.

Ill., Chicago—APARTMENTS—Owner, c/o Homer Rissman, archt., 2440 N. Lakeview St., twelve 2 story, brick Lannon stone, blue stone apartments, 510 W. Barry Ave. $250,000.

Ind., Muncie—SCHOOL—St. Mary's Parish, Muncie, Rev. Edgar J. Cyr, pastor, parochial school, on 22 acre Kitselman Estate, church, nursery school, convert old church into youth center.

Ia., Des Moines—OFFICE—Homesteaders Life Co., Securities Bldg., office, $275,000.

Ia., Dubuque—CHURCH—St. Joseph's Parish, St. Joseph and Stetmore Sts., church, auditorium and parochial school. $300,000.

Md., Baltimore—RESIDENCES—John B. Gaither, Jr., 3506 Orchard Rd., plans by L. A. Menefee, 347 N. Charles St., sixty 1½ story, bsmnt., 26x32 ft. brick, stone residences, near here. $600,000.

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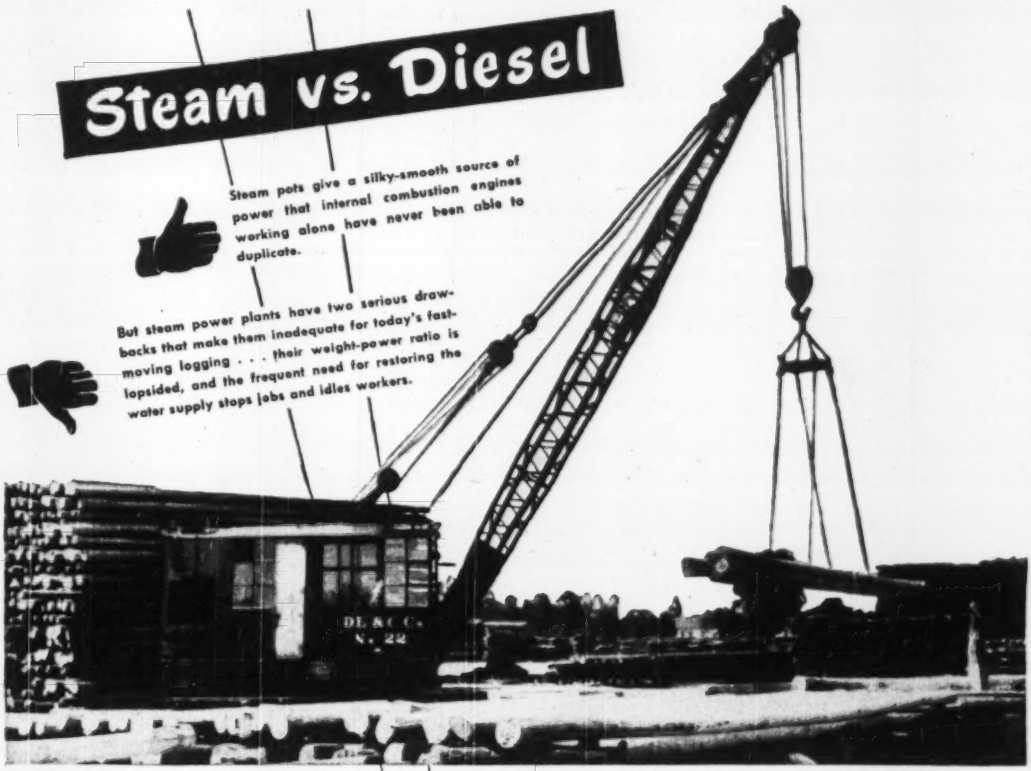

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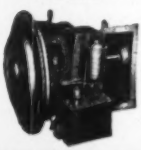

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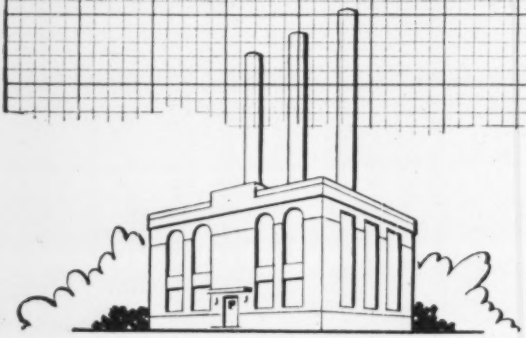
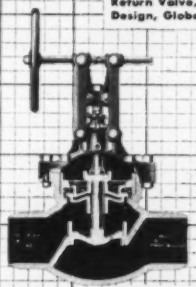
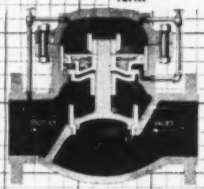
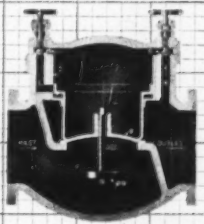




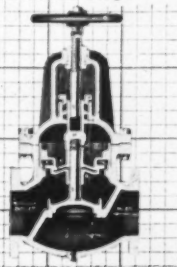
G-A Single Acting Non-Return Valve, Toggle Yoke Design, Globe Pattern.



G-A Automatic Hydraulic Check Valve, Globe Pattern.



G-A Double Cushioned Check Valve, Globe Pattern.



G-A Combined Throttle and Automatic Engine Stop Valve, Standard Yoke Design.

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VALVES SINCE 1905

Md., Baltimore—SCHOOL—St. Mathews R.C. Church, Rev. Chas. H. Yingling, 4800 Loch Raven Blvd., plans by Gaudreau & Gaudreau, 527 N. Charles St., Zone 2, 1st project planned, 12 classroom school, adjoining auditorium, 1 story, bsmnt., for cafeteria and kitchen, brick, limestone, (future planning convent, upper and lower church, rectory, parking space for 400 cars).

Mass., Lowell—SCHOOL—St. Jeanne D'Arc R. C. Parish, D. Morisette, pastor, 137 White St., plans by Oliver W. Fontaine, 235 Main St., Woonsocket, R. I., 2 story, bsmnt., brick, steel school, $250,000.

Minn., Columbia Heights—THEATRE-BOWLING ALLEY—O. Shanedling, 2721 France Ave. S., Minneapolis, theatre-bowling alleys, Central Ave., between 39 and 40 Aves. $400,000.

Mont., Missoula—CHURCH—St. Anthony's Parish, 330 Edith St., plans by Fox & Ballas, Missoula, and P. Thiry, 800 Columbia St., Seattle, Wash., church. $300,000. CD 5/17/48.

▲ Neb., Omaha—APARTMENT—T. H. Maenner Co., 808 City Natl. Bank Bldg., plans by M. J. Lahr, Standard Oil Bldg., apartment 22 and Jones Sts. Approx. $2,000,000,

▲ N. J., Princeton—SHOPPING CENTER—Clearview Associates, 145 Harrison St., plans by Ketchum Gina & Sharp, 227 E. 44 St., New York, N. Y., shopping center, Harrison Ave. $2,000,000.

N. M., Albuquerque—CHURCH—Central Avenue Methodist Church, Albuquerque, plans by Brittelle, Ginner & Nourier, engrs. and archts., 900 W. Park Ave., 1 story, brick church, Pine St. and Copper Ave. $250,000.

▲ N. M., Las Vegas—HOTEL—Hotel El Rancho Vegas, Las Vegas, addnl. hotel expans. $1,000,000.

▲ N. Y., Brooklyn—HOUSING—Independence Gardens, Inc., 16 Court St., Zone 2, plans by Oscar I. Silverstone, 153 Pierrepont St., Zone 2, two story two family houses, Bay 8 St. Shore Rd., Independence and 15 Aves. $1,822,800.

▲ N. Y., Forest Hills—APARTMENT—75-02 Austin Street Realty Corp., c/o Samuel Paul, archt., 163-18 Jamaica Ave., Jamaica, 6 story apartment, Austin St. and 75 Rd. $1,000,000.

N. Y., New York—APARTMENT—1266 Second Ave. Corp., 292 Madison Ave., Zone 17, plans by George G. Miller, 67 W. 44 St., Zone 18, 6 story apartment, 1260-74 Second Ave. $800,000.

N. Y., New York—APARTMENT—89-37 Realty Corp., 400 Madison Ave., Zone 17, plans by Richard Roth, 18 E. 48 St., Zone 18, apartment, 26-32 E. 37 St. $779,000.

▲ N. C., Greensboro—SHOPPING CENTER—Bessemer Imprvt. Co., c/o Edward Loewenstein, archt., Greensboro, Summit Shopping Center. $1,000,000.

N. D., Dickinson—NURSES HOME—St. Joseph's Hospital, Dickinson; plans by Walter Butler Co., Minnesota Bldg., St. Paul, Minn., nurses home. $250,000.

O., Berea—CHURCH—First Methodist & Emanuel Methodist Churches, 139 E. Center Co., plans by Mellonbrook, Foley & Scott, 26 Front St., church, $200,000; educational bldg., $265,000, Seminary and Spring Sts.

O., Cleveland—OFFICE, etc.—Melvin Lazerick & James M. Glick, 3706 Carnegie Ave., plans by Nathan Bernstein, 4618 Euclid Ave., office and sales bldg., Carnegie Ave. and E. 40 St. $250,000.

O., Columbus—CHURCH—Trinity Methodist Church, 1114 Wyandotte Rd., plans by A. Hensel Fink, 1701 Arch St., Phila., Pa., church. $300,000.

O., Dayton—HOUSING—Fred Lewis, c/o Ralph Woolpert Co., engr., 360 W. 1 St., 180 houses, 100 apartment units, and shopping center on 60 acre tract, Salem Pike.

Pa., Canonsburg—HOSPITAL—Canonsburg General Hospital, Canonsburg, plans by Ingham, Boyd & Pratt, Empire Bldg., Pittsburgh, 4 story, bsmnt., concrete block, brick hospital addn., steel joist. $250,000. George W. Brugger, 1st Natl. Bank, assoc. archt. CD 10/17.

▲ Pa., Phila.—APARTMENT—Kevon Constr. Co., 52 St. and Montgomery Ave., plans by J. Ethan Fieldstein, 1325 Walnut St., apartment, 18 St. and S. Rittenhouse Square. $3,500,000.

R. I., South Kingstown—HOUSING—N. R. Smith, c/o Creer, Kent, Mather, Cruise & Aldrich, archts., 423 Industrial Trust Bldg., Providence, summer homes and community center, incl. stores, recreation bldgs., Matunuck Beach. $250,000.

S. C., Charleston—RESIDENCES—Long Corp., King and Mount Pleasant Sts., 69 two family ranch-type residences. $690,000.

Tenn., Memphis—THEATER—Malco Theaters, Inc., c/o Bruggeman, Swain & Allen, archts., Gazette Bldg., Little Rock, Ark., theater. Approx. $250,000.

Tex., Dallas—THEATRE—Interstate Theatres, Majestic Bldg., plans by Broad & Nelson, Reserve Loan Life Bldg., 2 story, steel, masonry theatre, air-conditioning, etc., Anthony Plaza. $300,000.

▲ Tex., Dallas—DWELLINGS—Vernon & James Smith, 2153 Fort Worth Ave., 225 dwellings, off 5-mile Drive, $1,350,000; 275 dwellings, between S. Zang and Saner Ave., $1,650,000.

Tex., Denison—RESORT HOTEL—Horace Black, 4501 Mockingbird Lane, Dallas, Lake Texoma Resort Hotel, 8 mi. northwest of here. $500,000.

▲ Tex., Fort Worth—OFFICE—Continental Insurance Co., c/o Sterling Holloway, Commercial Standard

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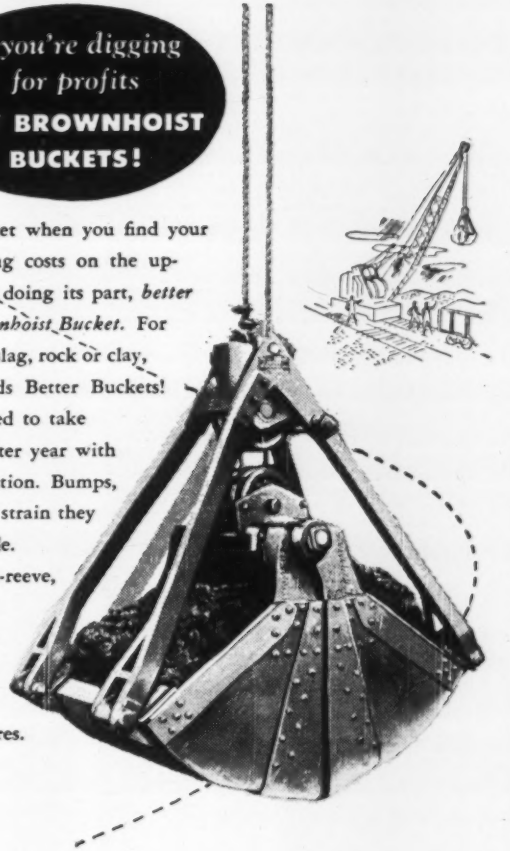

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Bldg., plans by Preston M. Geren, 905 N. P. Anderson Bldg., 20 story, bsmnt., masonry office, 7 and Main Sts. $4,000,000.

Tex., Galveston—HOUSING—Town & Country Builders, Inc., c/o Nathan L. Jones, pres., 9001 Denton Dr., Dallas, housing. $350,000.

Tex., Houston—DWELLINGS—G. T. Ellis, 215 Ashburn St., 35 dwellings, Marwood Addn. $250,000.

Tex., Houston—SHOPPING CENTER—L. P. Ligotino, 4023 Polk St., shopping center and few dwellings, Polk Ave. $250,000.

▲ Tex., Houston—SHOPPING CENTER, APARTMENTS, etc.—Pleasantville, Inc., c/o Melvin A. Silverman, 6110 Almeda Rd., plans by Lloyd & Morgan, 4605 Montrose Blvd., masonry shopping center in Pleasantville area, $325,000; 500 frame on concrete slab Negro apartment units, known as Pleasantville, $3,000,000; 410 frame on concrete slab duplexes for Negroes, $2,500,000, off 8200 block Market St. Rd. Still, Wildman & Crockett, 3500 Almeda Rd., consult. engrs.

Tex., Houston—HOUSING—George H. Schlee, 2731 Latcot St., 31 addnl. housing units, Maple St. $275,000.

Tex., LaPorte—DUPLEXES, etc.—The Bee Corp., c/o Byron Moore, 1364 Wakefield Dr., 15 duplexes, concrete post fdn. frame, $250,000; 31 dwellings, concrete slab fdn. frame, $250,000, old township area.

▲ Tex., Lubbock—MERCANTILE—Dunlap Department Store, Lubbock, 3 story, mezzanine, bsmnt., concrete, steel frame, masonry mercantile bldg., Broadway and Avenue L. $1,000,000.

Tex., McKinney—HOUSING—Town and Country Builders, Inc., c/o Nathan L. Jones, pres., 9001 Denton Dr., Dallas, housing. $275,000.

Tex., Snyder—STORES CENTER—Syndicate, c/o Chamber of Commerce, Snyder, 21 unit masonry stores center. $400,000.

Wis., Milwaukee—APARTMENT—Royal Plaza Apartments, c/o M. B. Coifman, engr., 1220 N. Milwaukee St., Zone 2, 9 story, bsmnt., 144 unit apartment.

Wyo., Casper—ODD FELLOWS BLDG.—Odd Fellows, Casper, modern 3 and 4 story, brick, steel bldg., Approx. $400,000-$500,000.

N. S., Halifax—THEATRE—Famous Players Canadian Corp., Ltd., Royal Bank Bldg., Toronto, Ont., theatre, Quinpool Rd., near Oxford St., $250,000.

Que., St. Marthe du Cap—ORPHANAGE—Reverend Sisters of the Rosary, 1455 Blvd. du Carmel, Three Rivers, orphanage, Red Mills and Hy. 2, $350,000.

INDUSTRIAL BUILDINGS

Ill., Evanston—PLANT, etc.—Standard Rate & Data Service, 333 N. Michigan St., plans by Maher & McGrew, 626 Grove St., Evanston, 2 story, bsmnt., steel, brick, concrete, stone printing plant and office, Ridge Ave. and Lyons St. $350,000.

▲ Ill., Skokie—FACTORY—Powers Regulator Co., Oakton St. west of McCormick Blvd., plans by Sessions Eng. Co., 1 N. LaSalle St., Chicago, Zone 2, 200,000 sq. ft., steel, brick, concrete factory. $1,100,000.

Mo., St. Louis—SALES AND SERVICE, etc.—Lonsdorf Motor Co., 4718 Natural Bridge Ave., Zone 15, plans by Arthur B. Bathert, 3615 S. Grand Blvd., Zone 18, 1 story, 45x80 ft. and 70x138 ft., brick, concrete, steel automobile sales and service bldg., 83x135 ft. bowling alleys, 25 and Palm Sts.

Mo., St. Louis—SERVICE—Occupational Therapy Workshop, Inc., Miss Marion Clark, ex-secy., 4567 Scott Ave., plans by Bernoudy & Mutrux, 7 Forsyth Walk, Clayton, St. Louis Zone 5, 2 story, bsmnt., brick, concrete, glass office and service bldg., 3747 Washington Ave. $100,000.

N. Y., New York—STORAGE WAREHOUSE, etc.—Dannarco Realty Corp., 500 W. End Ave., Zone 24, plans by Lamb, Proskauer & Prober, 383 Pearl St., Brooklyn, Zone 1, storage warehouse, offices and store bldg., 218-239 W. 31 St. $550,000.

N. C., Charlotte—AUTO PARTS—Piedmont Auto Co., 228 S. Church St., rebuilding auto parts bldg. Approx. $100,000.

O., Brooklyn Village—FACTORY—Associate Constr. Co., 11740 Lake Ave., Lakewood, Zone 7, nine 1 story factory bldgs., Associate Ave. $108,000.

O., Cleveland—STORAGE—Ohio Overall Cleaning Co., 8008 Central Ave., 1 story, brick, block, steel, storage bldg., boiler room and loading dock, H. M. Moise, 3334 Prospect Ave., consult. engr.

▲ O., Mansfield—STEEL MILL—Fema Co., Mansfield, c/o A. J. Krantz, Reeves Steel Corp., 137 Iron Ave., Dover, continuous strip steel mill at Empire Steel Co. plant. $10,000,000.

Okla., Garber—GRAIN ELEVATOR—Farmers Union, Garber, 300,000 bu. grain elevator. $125,000.

Okla., Pond Creek—GRAIN ELEVATOR—Farmers Union, Pond Creek, 300,000 bu. grain elevator. $130,000.

Ore., Portland—WAREHOUSE—Mike De Cicco, 2330 S. W. Water St., plans by Anthony J. Dreyer, 4220 S. W. Lobelia St., 225x300 ft. tire warehouse expans. $250,000.

R. I., Cranston—WAREHOUSE, etc.—Narragansett Brewing Co., New Depot Ave., 2 story, 90x180 ft., brick, steel, concrete, warehouse, bottling plant and machine room, New Depot Ave. $325,000. D. T. O'Neil, c/o owner, engr.

Tex., Dallas—TERMINAL, etc.—Cathey & Carrell Truck Lines, Ind., 1310 River St., trucking terminal and repair shop in Trinity Industrial area. $200,000.

Tex., Dallas—WAREHOUSE—Ralph Lofland, 5219 Maple St., plans by Smith & Mills, Mercantile Bank Bldg., 1 story 26,000 sq. ft., masonry, steel frame warehouse, concrete slab fdn. $175,000.

Tex., Irving—GASOLINE STATION, etc.—Humble Oil & Refining Co., Irving, bulk gasoline station, tire and auto accessory warehouse, $250,000; maintenance shop, 1201 Harrison St., $90,000.

Tex., Laredo—POWER PLANT—Central Power & Light Co., 120 N. Chaparral St., San Antonio, revised plans, electric power plant. $600,000. Former bids cancelled. George A. Mills, c/o owner, engr. CD 11/10.

▲ Alta., Edmonton—PAPER MILL—Edmonton Pulp & Paper Mills, Ltd., Edmonton, 200 ton daily paper mill in east of city and north side of North Saskatchewan River. Approx. $10,000,000.

Alta., Nordigg—FACTORY—Brazeau Collories, Nordigg, factory. Approx. $150,000.

B. C., Vancouver—WAREHOUSE—Alliance Ware Ltd., 1590 Powell St., plans by Sharp & Thompson, Berwick, Pratt, 155 Robson St., warehouse, 1500 Franklin St., Approx. $100,000.

UNCLASSIFIED

Florida—RURAL DISTRIBUTION LINES—Florida Keys Electric Co-operative Assoc., Tavernier, 32 mi. rural distr. lines, addnl. generating facilities and sys. imprvs., Monroe Co. $365,000.

Ill., Carlinville—DRIVE-IN THEATRE—Frisina Amusement Co., Dominic Frisina, pres., 421½ S. 5 St., Springfield and Mrs. Frieda Paul, Carlinville, 750 car motion picture drive-in theatre. Approx. $100,000.

Kan., Lawrence—FIELD HOUSE—State Bd. Regents, Topeka, plans by C. L. Marshall, state archt., field house, University of Kansas. $750,000.

Mass., Belmont—DAIRY—Commonwealth of Mass., Dpt. Mental Health, 100 Nashua St., Boston, plans by Drummey-Duffill, Inc., 80 Boylston St., Boston, dairy, Proj. M-215, Walter E. Fernald School. $100,000.

Michigan — RURAL DISTRIBUTION LINES — Cherryland Rural Electric Co-operative Assoc., Traverse City, 50 mi. rural distr. lines, sys. imprvs., Grand Traverse Co. $260,000.

Minnesota — RURAL DISTRIBUTION LINES — Faribault County Co-operative Electric Assoc., Frost, 57.5 mi. rural distr. tie lines and sys. imprvs., Faribault Co. $250,000.

Minnesota—RURAL DISTRIBUTION LINES—Freeborn-Mower Co-operative Light & Power Assoc., Albert Lea, 204 mi. rural distr. lines and sys. imprvs., Freeborn Co. $715,000.

Minnesota—RURAL DISTRIBUTION LINES—Wild Rice Electric Co-operative, Mahnomen, 254 mi. rural distr. lines and sys. imprvs., Becker Co., $400,000.

Mo., St. Louis County—DRIVE-IN THEATRES—St. Louis Amusement Co., James H. Arthur, secy., Fox Theatre Bldg., 527 N. Grand Blvd., St. Louis, Zone 3, plans by Lewis Eugene Wilson, 714 W. Olympic Bldg., Los Angeles, Calif., two 1000 car drive-in theatres, in St. Louis Co., one vicinity of Lindbergh Dr. and U. S. 50, and the other in northern part of county adjacent to Hy. 99. $200,000.

Nebraska — RURAL DISTRIBUTION LINES — Southern Nebraska Rural Public Power Dist., Grand Island, rural distr. lines, Hall Co. $610,000. Raymond H. Reed & Co., Columbus, consult. engrs. CD 4/7/47.

O., Cleveland — SWIMMING POOL, etc. — Beechmont Country Club, 28200 Kinsman Rd., Zone 22, swimming pool, bath-club house. $300,000.

Texas—RURAL DISTRIBUTION LINES—Athens Electric Co-operative, Athens, rural distr. lines Henderson Co. $100,000.

Texas—RURAL DISTRIBUTION LINES—Fayette Electric Co-operative, Flatonia, rural distr. line extens., sys. imprvs., Fayette Co. $115,000.

Texas — RURAL DISTRIBUTION LINES — Hall County Electric Co-operative, Memphis, 2 way communication sys., expanded lines, headquarters facilities, Hall Co. $158,000.

Texas—RURAL DISTRIBUTION LINES—New Era Electric Co-operative, Athens, 45 mi. rural distr. lines and sys. imprvs. Henderson Co. $100,000.

Tex., Corpus Christi—PARKS—City voted bonds, Northside Park, $75,000; Southside Park, $75,000. CD 11/7.

Utah—RURAL DISTRIBUTION LINES—Dixie Rural Electric Assoc., St. George, 56 mi. rural distr. lines and sys. imprvs., Washington Co. $438,000. CD 11/14/45.

Utah—RURAL DISTRIBUTION LINES—Garkane Power Assoc., Richfield, 14 mi. rural distr. lines and sys. imprvs., Sevier Co. $218,000.

Utah — RURAL DISTRIBUTION LINES — Utah-Arizona Electric Assoc., Kanab, 71 mi. rural distr. lines and sys. imprvs., Kane Co. $300,000.

Wis., Milwaukee—DOCK—Bd. Harbor Comrs., City Hall, dock on Jones Island, $350,000. J. P. Schwada, city engr.

N. S., New Glasgow—RINK—Municipality, 3,700 seating capacity hockey rink, $150,000.

N. S., Pictou—PIER, etc.—Acting Secy. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., plans by G. Brault, c/o owner, steel, concrete pier and freight shed, Approx. $800,000. R. Blais, c/o owner, engr.

Ont., Meaford—ARENA—Municipality, arena, $130,000.

Ont., Toronto—STADIUM—University of Toronto, Dr. S. Smith, pres., 29,000 seating capacity rein.-con. Varsity Stadium addn. Approx. $650,000.

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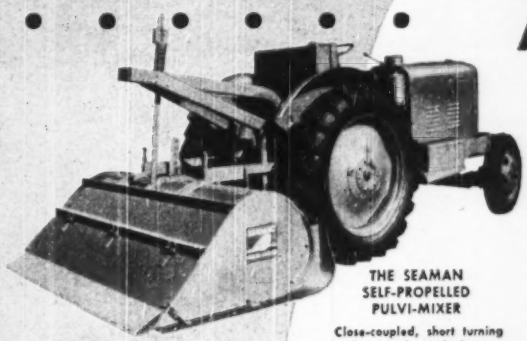

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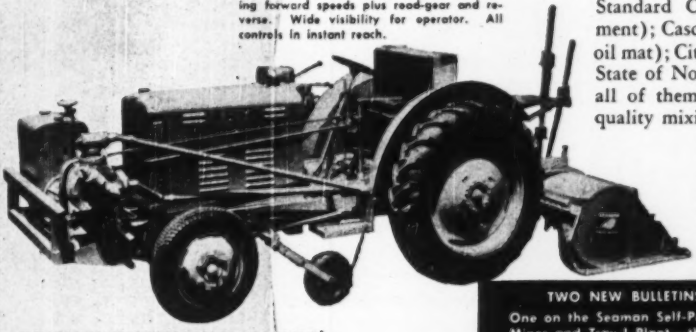

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ROCKMASTER "16" TIMINGS

Rockmaster No.	Avg. Time of Each Delay from Zero (milli-seconds)
0 (zero)	0 (inst.)
1	8
2	25
3	50
4	75
5	100
6	125
7	150
8	175
9	200
10	250
11	300
12	350
13	400
14	450
15	500
16	550

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CONSTRUCTION REPORTS-Second Section

WATER SUPPLY

BIDS ASKED

Tex., Beaumont—Bids Asked—Gaylynn Apartment Corp., c/o D. Hannah & J. Cassidy, 800 Main St., Houston, c.i. waterlines, facilities. $35,000.

LOW BIDDERS

▲ **La., Lafayette**—City, Jan. 6, WV., main extens., from Blythe Bros. Co., P. O. Box 989, Charlotte, N. C. $1,380,843. CD 12/6.

N. M., Albuquerque—U. S. Eng., Box. 1538, Albuquerque, Dec. 30, water supply sys., 4 mi. 13.2 kv. power lines with appurtenances for supply sys. Serial No. Eng-29-005-50-25 from Howard P. Foley Co., 240 E. 1 South St., Salt City, Utah. $45,483. Est. $50,000.

Tex., Fort Worth—City, W. O. Jones, city mgr., City Hall, Jn. 5, 1 m.g. elevated water tank in Riverside area from Pittsburgh-Des Moines Steel Co., Praetorian Bldg., Dallas. $139,285. CD 12/16.

CONTRACTS AWARDED

Tex., Dallas—Vernon and James Smith, 2153 Fort Worth Ave., c.i. waterlines, to M. A. Stein Co., 800 N. St. Paul St. $33,000. CD 1/5.

Tex., Houston—Southland Investment Co., 7106 Long Dr., c.i. waterlines, facilities, own forces. Approx. $35,000. CD 1/5.

Wash., Kennewick—City, City Hall, 2 m.g. water reservoir, (first unit of $700,000 program) to E. A. Erikson, Kennewick, $92,738. Bids 1/3. CD 12/28.

SEWERS, WASTE DISPOSAL

BIDS ASKED

Tex., Fort Worth—B.A. 1/26—City, W. O. Jones, mgr., City Hall, sanitary sewer in Decatur Rd. area, north of Fort Worth & D. C. Railroad. $50,000. Plans deposit $10. C. M. Thelin, dir. Pub. Wks.

Conn., Middletown—Bids Asked—City, P. Wks. Dpt., Middletown, incinerator, Kennedy Meadows, $50,000. Nichols Eng. Co., 42 Drouve St., Bridgeport, engrs.

Tex., Beaumont—Bids Asked—Gaylynn Apartment Corp., c/o D. Hannah & J. Cassidy, 800 Main St., Houston, sanitary sewers, drainage. $50,000.

LOW BIDDERS

Ariz., Tucson—Pima County Sanitary Dist., interceptor sewerage sys. 8 mi. sewer lines comprising interceptor and 2 trunk sewers, from Charles W. Dorfman, 224 N. La Brea St., Los Angeles, Ca if., $244,039. CD 1/6.

Calif., Los Angeles—Bd. Supervs. Los Angeles Co., 501 Hall of Records, Jan. 3, 5.22 mi. 8- to 12-in. vitr. clay sanitary sewers in Garvalia Ave., Garvey, C. I. 1257, from N. A. Artukovitch, 723 Union St., Montebello, $104,609. Est. $113,750.

Calif., Santa Ana—City Council, City Hall, Jan. 3, 19,583 ft. sewers and 11,555 ft. c.i. water pipe in Assessment Dist. 194, from P. & J. Artukovitch, 13305 S. San Pedro St., Los Angeles, $124,301. CD 12/16.

CONTRACTS AWARDED

Tex., Dallas—Vernon & James Smith, 2153 Fort Worth Ave., sanitary sewers, to M. A. Stein Co., 800 N. St. Paul St., Approx. $66,000. CD 1/5.

Tex., Hillsboro—City, City Hall, sewage disposal unit, own forces. Approx. $65,000. Bids 10/24. CD 10/17.

Tex., Houston—Southland Investment Co., 7106 Long Dr., sanitary sewers, drainage, own forces. $62,000. CD 1/5.

Tex., Houston—Standard Place Utilities Corp., c/o Douglas & Co., engrs., 1420 S. Main St., sanitary sewers, own forces. Approx. $50,000. CD 12/7.

Wash., Woodland—City, City Hall, 28,000 ft. 8 and 10 in. gravity sewer lines, to P. S. Lord, 4507 S. E. Milwaukee St., Portland, Ore., $68,235. Bids 1/3. CD 12/14.

Wis., Milwaukee—City, combined sewer in E. Bradford Ave. from N. Prospect Ave. to N. Wahl Ave., to Tomaro Contractors, 5317 S. Lake Dr., Cudahy, $81,811. Bids 12/23, awarded 12/30. CD

Wyo., Kemmerer—City, storm and sanitary sewers, to Woodward Constr. Co., Box 1046, Rock Springs, $80,989.

N. S., Scotchtown—Municipality, sewerage sys., day labor, $70,000.

BRIDGES

LOW BIDDERS

Missouri—State Rds. Comn., Jefferson City, Jan. 4, two 30 ft. two 70 ft. one 80 ft. continuous 1-beam spans, Station 497 plus 86 over Chariton River E. D., Rte. 36, Proj. F 231 (6) road, from New Cambria to Callao, Macon Co., from Universal Bridge Co., Inc., Scarritt Bldg., Kansas City, $134,944. CD 12/21.

STREETS AND ROADS

BIDS ASKED

† **Oklahoma**—B. A. 1/27—U. S. Eng., P. O. Box 61, Tulsa, relocate Oklahoma State Hy. 99 across Hulah Reservoir. $200,000. CD 8/31/444.

Tex., Beaumont—Bids Asked—Gaylynn Apartment Corp., c/o D. Hannah & J. Cassidy, 800 Main St., Houston, street constr., site dirt work. $50,000.

LOW BIDDERS

California—State Div. Hys., Sacramento, Jan. 4, plant mix. on crushed run base 3.1 mi. between Foster Rd. and Union Station, Napa Co., from Frederickson Bros., 1259 65 St., Emeryville, $239,506. CD 12/12.

Calif., Los Angeles—Bd. Supervs. Los Angeles Co., 501 Hall of Records, Jan. 3, imprv. 5,380 lin. ft. Downey Ave., Alameda to Firestone Blvd., from Bainter Constr. Co., 1767 Lime Ave., Long Beach, $91,166. CD 12/15.

Colorado—State Hy. Dpt., Denver, Jan. 4, grading, structure, oil processed surf. 5.518 mi. Pueblo and Livesey, Colo. Proj. S 0016 (2), Pueblo Co., from Henry Shore, 510 S. Windmere Ave. Littleton, $238,691. Est. $287,034. CD 12/28.

Missouri—State Hy. Dpt., Jefferson City, Jan. 4, c. conc. 1.545 mi. Rte. 60, Proj. F204 (5) A-Rd. from Poplar Bluff east, Butler Co., from Atkinson Windle Co., Chillicothe, $76,933; c. conc. 4.257 mi. Rte. 79 Proj. F 299 D (1), road from Winfield south to Old Monroe, Lincoln Co., from Cameron Joyce Kuss Constr. Co., Keokuk, Ia., $241,722. CD 12/21.

Ohio—State Hy Dpt., Columbus, Zone 15, cancelled bids to have been opened Dec. 20, grading, draining, paving, Type T-35 on B-20, U. S. R. 24, Lucas Co.; Type T-34 on B-20 and structure, S. R. 73, Highland Co. CD 12/9.

† **Oklahoma**—U. S. Eng., P. O. Box 61, Tulsa, Jan. 4, relocating Hy. 33, Inv. No. CIVENG-34-066-50-55 from William D. Jeffery Constr. Co., 4201 Towson St., Fort Smith, Ark., $178,490. CD 12/20

Okla., Oklahoma City—City, City Hall, rejected bids Dec. 13, c. conc. paving Dist. 1108, L. B. $74,428. Est. $69,902. CD 12/6.

Pennsylvania—State Hy. Dpt., Harrisburg, Jan. 6, bit. surf., crushed aggregate base 24 ft. wide and drainage 0.31 mi. Rural Route 03068, Kittanning Boro, Rayburn Twp., Armstrong Co., from Smoothway Constr. Co., Appollo, $85,758***bit. surf., crushed stone base 0.21 mi., 18 ft. wide, and I-beam bridge over Brandywine Creek and bit. surf. railroad crossing, T. R. 82, West Nantmeal Twp., Chester Co., from Kingston Contg. Co., Lattimer Mines, $59,280***wid'n 2.12 mi. pavement with c. conc. base course 6 ft. and variable in width, bit. surf. new base and existing pavement 22 ft. and variable width, Rural Route 25067, Harbor Creek Twp., from near Wesleyville Boro, southeasterly, Erie Co., from The Baldwin Bros. Paving Co., 1690 Union Commerce Bldg., Cleveland, 14, O., $114,816***c. conc. 0.052 mi. 24 ft., 29 ft. and variable in width, one I-beam bridge replacing plate girder bridge over Lehigh Valley R. R., bit. surf. 24 ft. and 29 ft. wide for adjustment, U. S. 11, Jenkins Twp., Luzerne Co. from Wagner Constr. Co., 115 S. Wyoming Ave., Kingston, $242,803***bit. surf. 4.69 mi. existing pavement, 18 ft. wide; wid'n existing pavement with crushed aggregate base, bit. surf. new base and existing pavement, bit. surf. crushed aggregate base, 22 ft. wide and one I-beam bridge over Big Run Creek, U. S. 220, Shrewsbury and Penn Twps., Lycoming Co., from The Interstate Amiesite Co., 265 Delaware Trust Bldg., Wilmington, Del., $141,941***bit. surf., crushed aggregate base 3.12 mi. one open type steel beam bridge flooring on existing bridge over Kettle Creek and bit. surf. pavement for adjustment, Rte. 120, Stewardson Twp., Potter Co. from Brown, Davis & White, Box 203 Lebanon, $244,292. CD 12/21.

CONTRACTS AWARDED

California—State Div. Hys., Los Angeles, b. conc. on cement treated base, new 2-lane roadway parallel to existing roadway plant mix on untreated rock base outer highways on each side and exten. bridge over Coyote Creek and constr. 2 rein.-con. slab bridges parallel to existing bridge on Santa Ana Parkway between Rosecrans Ave. and Orange Co. line, Los Angeles, Los Angeles Co., to Peter Kiewit Sons' Co., 345 Kiewaya Ave., Arcadia, $677,249. Bids 12/22. CD 12/29, under LB.

Ohio—State Hy. Dpt., Columbus, Zone 15, b. conc. wid'n resurf. U. S. R. 68, Champaign Co., to Max J. Zeller, Inc., 297 S. High St., Columbus, $73,800 est. $92,900***grading, draining, paving, wid'n., construct continuous steel beam bridge, S. R. 82, Portage Co., to DeLuca Constr. Co., 1055 Grant St., Akron, $349,888 est. $365,700***grading, drainage, paving, concrete slab bridge with concrete sub-structure, U. S. R. 40, Guernsey Co., to Curl Myers & Co., 317 S. High St., Columbus, $461,851 est. $696,600*** grading, draining, paving, continuous steel beam bridge with concrete deck and substructure 3 spans, C. R. 17, Green Co., to R. J. Kinstle, Box 293, Delphos, $50,141 est. $67,300. Grand total $935,680. Bids 12/20. CD 12/19.

Tex., Hemostead—City and Waller Co., Hempstead, addnl. street paving incl. curbing gutters, force account. Approx. $55,000. CD 4/4/46.

Tex., Hillsboro—City, City Hall, wid'n., paving S. Waco St., own forces. Approx. $75,000.

Tex., Houston—Southland Investment Co., 7106 Long Dr., street constr. and asph. paving, own forces. Approx. $65,000. CD 1/5.

EARTHWORK, WATERWAYS

BIDS ASKED

† **Illinois**—B.A. 1/24—U. S. Eng., 526 U. S. Courthouse & Custom House, St. Louis 1, Mo., levees East St. Louis, Illinois and vicinity, East Side Levee and Sanitary Dist., Proj. Item 1-D(2), St. Clair Co., CIVENG-123-065-50-62. CD 1/5.

† **Washington**—B.A. 1/26—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., furnishing, del. f.o.b. cars shipping point or f.o.b. cars Odair, Wash., steel partitions and cable trays incl. materials, except asbestos-cement sheets, necessary for complete installations for Grand Coulee Pumping Plant, Columbia Basin Proj., Spec. 2891. L. N. McClellan, ch. engr.

† **Kansas**—B.A. 1/27—U. S. Eng., P. O. Box 61, Tulsa, Zone 1, Okla., constr. Big Slough-Coweskin Floodway Parcel A, Arkansas River Basin, Wichita-Valley Center, Arkansas River, Sedgwick Co., CIVENG 34-066-50-83, $85,000. CD 12/27.

† **Louisiana**—B.A. 1/27—U. S. Eng., foot of Prytania St., New Orleans, Zone 9, approx. 160,000 cu. yd. uncompacted earthwork, etc., Lake Pontchartrain Levees, New Orleans Dist., CIVENG-16-047-50-194; approx. 46,000 cu. yd. semi-compacted earthwork, etc., Red River below Denison Dam Levees, New Orleans Dist., CIVENG-16-047-50-195.

Minn., Willmar—B.A. 1/27—Kandiyohi Co., J. W. Haines, aud.; construct County Ditch 52, incl. approx. 187,691 cu. yd. excav.; furnish, install 420 ft. 48- to 84-in. sectional concrete culverts; furnish, place 2,160 ft. 10- to 16-in. drain tile; 5 outlet pipes, $33,773. E. L. Chamberlain, Olivia, engr.

† **Louisiana**—B.A. 1/31—U. S. Eng., foot of Prytania St., New Orleans, Zone 9, approx. 1,250 lin. ft. pile dikes, located on and adjacent to right descending bank of Red River Mile 93.9 (1938), in Avoyelles Parish, about 1 mi. northeast of Echo, Item D-93.9-R, CIVENG-16-047-50-197.

La., New Orleans—B.A. 1/31—Lone Star Cement Corp., Hibernia Bank Bldg., 600 ft. rein.con., sheet pile bulkhead, in front of present wharf on Industrial Canal.

LOW BIDDERS

▲† **California**—Bureau Reclamation, Box 570, Tracy, Jan. 5, earthwork, structures, Sta. 4535 plus 00 to Sta. 5485 plus 50, Delto-Mendota Canal and Firebaugh Wasteway, Central Valley Proj., near Firebaugh, Merced Co., Spec. 2857, from United Concrete Pipe Corp. & Vinnell Co., Inc., 1145 Westminster Ave., Alhambra, $3,967,484. CD 12/6.

† **Illinois**—U. S. Eng., 286 U. S. Court House & Custom House, 1114 Market St., St. Louis 1, Mo., constr. closure structure Prairie Du Rocher, and vicinity Proj. III-D, Edgar Lakes and Prairie Du Rocher and Modoc Drainage & Levee Dist., Randolph Co., CIVENG-23-065-50-47, from Luhr Bros., Inc., Columbia, $45,259. CD 12/15.

† **Louisiana**—U. S. Eng., P. O. Box 60, Vicksburg, Miss., Jan. 4, channel imprvs., incl. approx. 637,000 cu. yd excav. 0.81 mi. clearing and snagging, Big and Colewa Creeks Channel Imprvs., Mile 60.00, to Mile 69.69, Richland and West Carroll Parishes, CIVENG 22-052-50-90, from Jesse E. Wood, Oak Ridge, $100,783. CD 12/3.

† **Wyoming**—Bureau Reclamation, Dpt. Interior, Cody, Dec. 29, earthwork, tunnel, structures and surf. for Shoshone power plant access road, Station 0 plus 00 to 13 plus 74.73, Shoshone Proj., Power Div., Park Co., Spec. 2845, from Taggart Constr. Co., Cody, $60,159. CD 11/29.

B. C., Port Alberni—Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., dredging from B. C. Bridge & Dredging Co., Ltd., 544 Howe St., Vancouver, Approx. $65,000. CD 12/20.

CONTRACTS AWARDED

Miss., Gulfport—Bd. Supervs., Harrison Co., repairs to sea wall, to Pressure Concrete Co., Florence, Ala., $250,000. CD 6/27/46.

Tex., Dallas—Vernon and James Smith, 153 Fort Worth Ave., drainage, grading for site development, to M. A. Stein Co., 800 N. St. Paul St. $53,335. CD 1/5.

Tex., Hempstead—City and Waller Co., Hempstead, addnl. drainage, incl. grading, open ditching, force account. Approx. $60,000.

AIRPORTS AND AIRBASES

BIDS ASKED

† **Ill., Glenview**—BUILDING IMPRVS.—B. A. 1/20—Pub. Wks. Office, Ninth Naval Dist., Great Lakes, conversion west wing of Bldg. 43, into married officers quarters at Naval Air Station, Spec. 23467. Plans deposit $10.

† **Mass., Chicopee Falls**—AIRBASE IMPROVS.—B.A. 1/24—U. S. Eng. Bldg. 21, U. S. Naval Drydock, South Boston, constr. G.C.A. sys. facilities, Westover Air Force Base, CIVENG-19-016-50-13.

CONTRACTS AWARDED

Ga., Atlanta—RUNWAYS—City, exten. runways at Municipal Airport, to MacDougald Constr. Co., Northside Dr., N.W., $476,885. Awarded 1/3/50. CD 6/28/45.

Tex., Waco—TERMINAL—City, airport terminal, maintenance bldg. repairs, to Ed Johnson, Martin Hy., $180,587. Bids 1/3. CD 12/27.

PUBLIC BUILDINGS

BIDS ASKED

† **Calif., Invokern**—LABORATORY, etc.—B.A. 1/24—U. S. Navy, Invokern, 42x482 ft. aero-dynamics laboratory, and 21x67 ft., rein.-con. control bldg., NOY 17182, Spec. 21054. Approx. $50,000. Plans deposit $60. Bids 11/10 rejected, L. B. $596,000. CD 11/23, under LB.

Kan., Pittsburg—SCHOOL—B. A. 1/24—State Bd. Educ., Topeka, secondary school at Kansas State Teachers College, $420,000. CD 8/5/49.

Wis., Lake—GARAGE—B.A. 1/24—Town, 4001 S. 6 St., Milwaukee, Zone 7, 1 story, 100x122 ft., steel, brick, concrete block municipal garage, concrete fdns.

NOVO QUALITY EQUIPMENT FOR FIFTY-NINE YEARS

A NEW PUMP

- DOUBLE DIAPHRAGM
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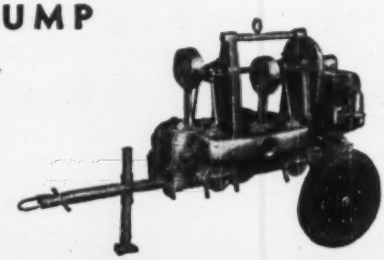
Handles twice the amount of muddy, or sand and debris-laden water as does Novo's well-known single diaphragm model. Write or wire for specifications on this new pump.



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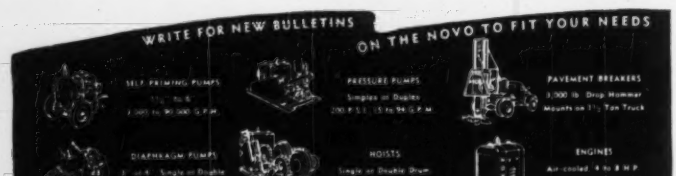

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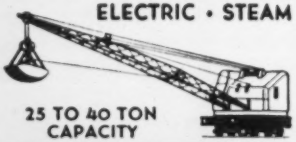

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Most economical to use for
PRECAST WALLS, FLOORS, ROOFS, BEAMS and COLUMNS—
IT MULTIPLIES THE SPEED

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RE-USED AS MANY AS 8 TIMES IN ONE DAY
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Strips castings from molds and handles them without breakage

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and floors, Darby-Bogner & Assocs., 759 N. Milwaukee St., Zone 2, Milwaukee, archts.

Ont., Ottawa—LABORATORY—B. A. 1/25—R. Fortier, acting secy., c/o Dpt. P. Wks., Hunter Bldg., 3 story, 64x290 ft., steel, concrete, stucco Applied Chemistry Bldg., Phase No. 2 for National Research Laboratory, Montreal Rd. east of here. Approx. $300,000. Plans deposit $200. G. Brault, c/o owner, archt. J. P. Keith & Assoc., 1440 St. Catherine St. W., Montreal, Que., engrs. CD 12/8/43.

Tex., Canyon—PHYSICAL EDUCATION—B. A. 1/26—West Texas State Teachers College, Canyon, physical educ. $401,400. Plans deposit $50. Macon O. Carder, 419 Fisk Bldg., Amarillo, archt. CD 10/5/45.

La., Lutcher—SCHOOL—B.A. 1/27—St. James Parish School Bd., Lutcher, 1 story, brick, steel auditorium for Vacherie School, dressing rooms under St. James School Stadium, and dressing rooms under Lutcher High School Stadium. Plans deposit $15 each. Wm. R. Burk, 414 Pan American Bldg., New Orleans, archt.

Mass., Hanson—SCHOOL—B.A. 1/27—Town, Bd. Selectmen, Town Hall, 2 story, bsmnt., brick, steel school, Indian Head St. $250,000. Plans deposit $30. CD 12/8/49.

Mont., Conrad—SCHOOL—B. A. 1/30—Bd. Educ., Conrad, high school, $450,000. CD 11/17.

LOW BIDDERS

Ala., Birmingham—SCHOOLS—City, South Pratt and Hudson Schools, from Sullivan-Long & Hagerty, 2014 2 Ave. N., Bessemer, Birmingham. $283,000. CD 8/25/44.

Ariz., Randolph—COTTAGES, etc.—State of Arizona, 17 Ave. and Washington St., Jan. 5, six 83x171 ft. dormitory cottages, dining, hall, day rooms, supervisory quarters, infirmary, administration quarters, from LaMar Homes Constr. Co., 3331 East Indian School Rd., Phoenix, $373,879.

Conn., Madison—SCHOOL—Town of Macison, Bd. Selectmen, Town Hall, 1 story, brick, steel school, Island Avenue, from Smith Constr. Co., 101 Water St., Derby. $298,100. CD 12/6.

▲ Minn., St. Paul—HIPPODROME—State Dpt. Admin., P. T. Peterson, dir. of purch., 19 State Capitol, Jan. 5, livestock coliseum (hippodrome) at State Fair Grounds, from Feyles CConstr. Co., 711 Wesley Temple Bldg., Minneapolis. $1,093,714. CD 10/7.

Minn., Wayzata—SCHOOL—Bd. Educ., C. H. Meyer, clk., rejected bids Dec. 13. 3 story school. CD 12/21.

Miss., Ripley—FACTORY—Tippah Co., Jan. 3, shoe factory, from L. B. Priester & Son Constr. Co., 526 Commerce St., Jackson. $158,000. CD 12/22.

CONTRACTS AWARDED

† Arizona—CONTROL—Bureau Reclamation, Dpt. Interior, Phoenix, control bldg. addn. with utilities at Phoenix substation, Davis Dam Proj., Spec. R-3-PX-21; to J. R. Porter Constr. Co., 1622 E. McDowell Rd., Phoenix. $67,832. Bids 11/30. CD 11/14.

Conn., Greenwich—HOUSING—Town, Greenwich Housing Authority, Noel Armstrong, chn., East Putnam Ave., 70 family units, Adams Gardens, to Chimblo Brothers, 393 Post Rd., Cos Cob. $715,750. Bids 12/12.

▲ Conn., New London—HOUSING—City of New London, New London Housing Authority, Richard H. Pugh, chn., 144 family unit garden apartments, Coleman St., to Associated Construction Co., 1010 Wethersfield Ave., Hartford. $1,572,432. Bids 12/1. CD 12/6, under LB.

Ia., Cedar Rapids—SCHOOL—Independent School Dist., Cedar Rapids, Buchanan School, to O. F. Paulsen Constr. Co., Iowa Theatre Bldg., Cedar Rapids. $402,000. CD 11/30, under LB.

▲ Mass., Westboro—HOSPITAL—Commonwealth of Mass., Dpt. Mental Health, 100 Nashua St., 2 brick, steel, 135 ft. long, T.B. patients bldg. wings, Hospital PM-48, to Grande & Son, Inc., 425-A Broadway, Everett. $1,647,017. Bids 12/29. CD 12/21.

Pa., Harrisburg—SCHOOL—Harrisburg School Bd., 121 Chestnut St., 600-pupil school, Hale St. and Harris Terrace, to Ritter Bros., 1511 N. Cameron St. $466,646. Bids 1/4, awarded 1/6. CD 12/16.

COMMERCIAL BUILDINGS

BIDS ASKED

Pa., Johnstown—HOSPITAL—B.A. About 1/24—Mercy Hospital, Johnstown, 7 story brick, tile backup, limestone trim, steel frame hospital, 1020 Franklin St. $900,000. Kaiser, Neal & Reid, 801 Keystone Bldg., Pittsburgh, archts. CD 2/6/48, under LB.

Wis., Madison — SCHOOL — B.A. 1/24 — St. Bernard's Catholic Congregation, 2430 Atwood Ave., 1 story school. $300,000. John J. Flad & Assoc., 908 W. Johnson St., archts. CD 10/28.

Tex., Alice—MERCANTILE—Bids Asked—Dr. F. A. Bass, Alice, mercantile. $250,00. Jim Stickter, 1206 3 St. Corpus Christi, archt. CD 8/12.

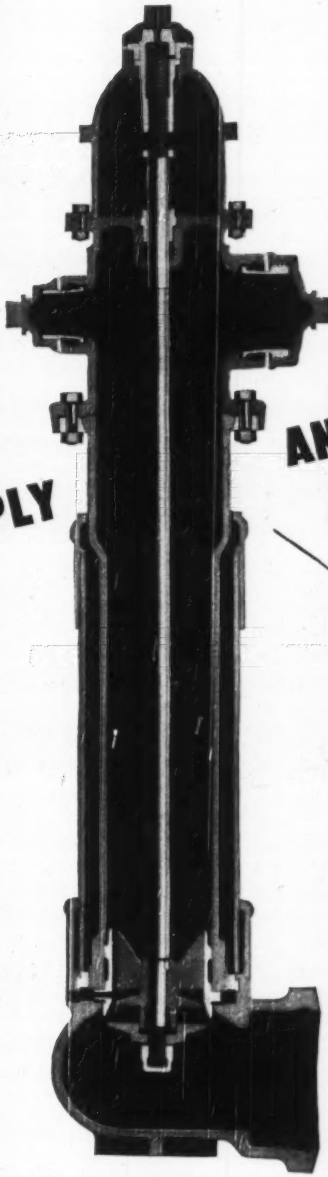
SOON LETS CONTRACT

Ill., Great Lakes—HOUSING—Ninth Naval Dist., Great Lakes, soon lets contract construct, manage and finance private rental housing for Naval establishments.

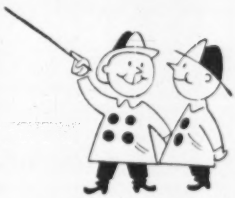
Mass., Winchester—HOSPITAL—Winchester Hospital, 41 Highland Ave., soon lets contract 4 story, bsmnt., 24,000 sq. ft., brick, steel, concrete hospital addn., $650,000. James H. Ritchie & Assoc., 38 Newbury St., Boston, archt. CD 10/1/46.

Ore., Roseburg—HOSPITAL—Mercy Hospital, Roseburg, soon lets contract 3 story, 40x80 ft. rein.-con. Mercy Hospital addn., $300,000. Jacobberger, Stanton & Zeller, McKay Bldg., Portland, archts. CD 9/18/44, under Public Bldgs.

(Continued on page 93)



SIMPLY AND SOUNDLY CONSTRUCTED



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MATHEWS MODERNIZED HYDRANTS SET THE PACE: All working parts contained in replaceable barrel • Stuffing box cast integral with nozzle section • Head can be turned 360° • Replaceable head • Nozzle outlets easily changed • Nozzle levels raised or lowered without excavating • Protection case of "Sand-Spun" cast iron for extra strength, toughness, elasticity • Operating thread only part to be lubricated • A modern barrel makes an old Mathews good as new

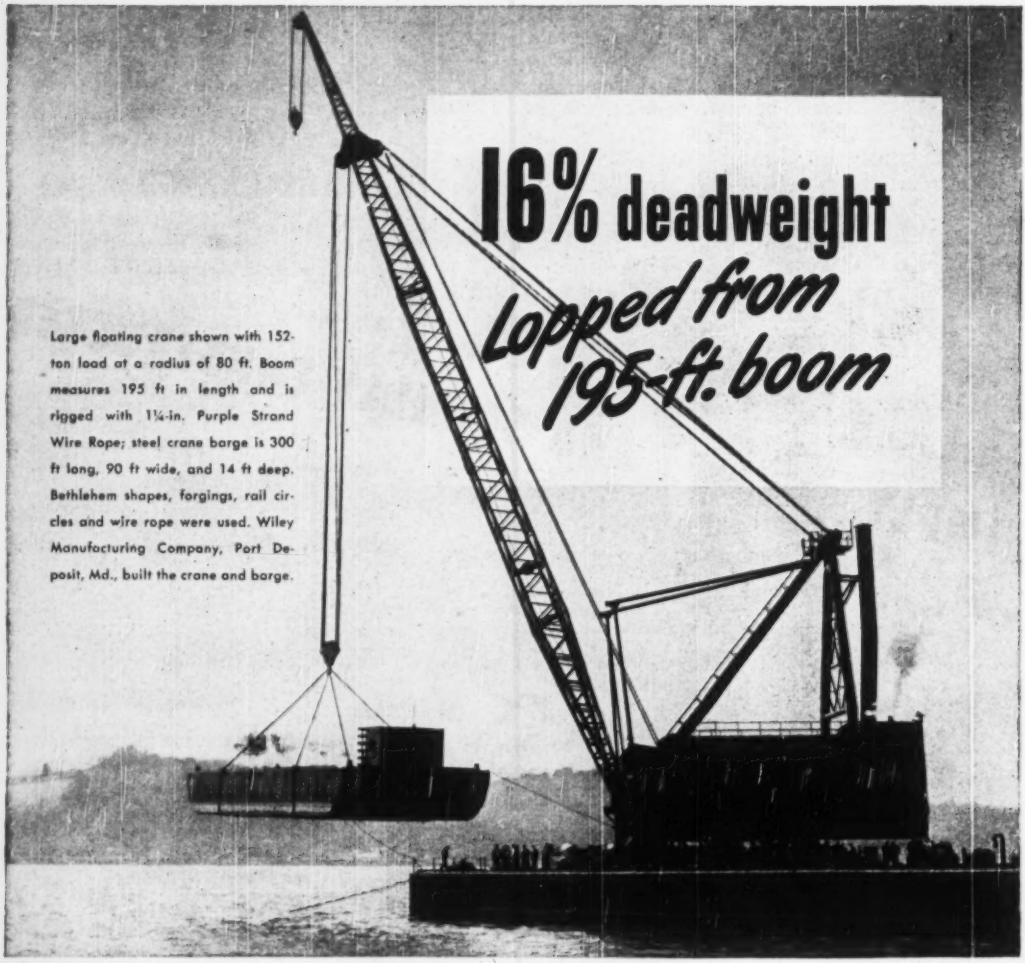
MATHEWS HYDRANTS

THE FIREMAN'S FRIEND

Made by R. D. Wood Company

Public Ledger Building, Independence Square, Philadelphia 5, Pa.

Manufacturers of "Sand-Spun" Pipe (centrifugally cast in sand molds) and R. D. Wood Gate Valves



16% deadweight lopped from 195-ft. boom

Large floating crane shown with 152-ton load at a radius of 80 ft. Boom measures 195 ft in length and is rigged with 1¼-in. Purple Strand Wire Rope; steel crane barge is 300 ft long, 90 ft wide, and 14 ft deep. Bethlehem shapes, forgings, rail circles and wire rope were used. Wiley Manufacturing Company, Port Deposit, Md., built the crane and barge.

This steam-powered floating crane was designed for erecting the steel platforms that support offshore oil-drilling operations in the Gulf of Mexico. The largest of its kind yet built, it has a lifting capacity of 150 tons at a radius of 80 ft.

The boom of this mammoth crane measures 195 ft in length and is constructed with chord angles of Mayari R low-alloy, high-strength steel. The use of this grade in place of ordinary structural carbon steel enabled the designers to save 25 pct of the deadweight of the chords, which is equivalent to a 16.3 pct reduction in the total weight of the boom. An additional weight-saving was made by the use of Mayari R in the "A" frames of the crane.

Mayari R is a versatile steel unusually well suited for structural applications of this type, where weight-reduction and atmospheric corrosion-resistance are important considerations. It can be fabricated and welded by the usual methods with only slight allowances needed for its higher properties.

Write today for a copy of Catalog 259 containing information on the properties as well as the structural and other uses of Mayari R.

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Mayari R *makes it lighter... stronger... longer lasting*

(Continued from page 90)

LOW BIDDERS

Wash., Bellevue—HOUSES—Veterans Mutual Bldg. Assn., c/o Chiarelli & Kirk and Bassetti & Morse, 2 and Cherry Bldg., Seattle, Zone 4, 54 houses in Norwood Village, from Virginia Lee Homes Inc., 400 W. Marginal Way, Seattle. $697,130. CD 12/20.

CONTRACTS AWARDED

▲ **Calif., Bellflower** — DWELLINGS — Biltmore Homes, Inc., 9434 Long Beach Blvd., South Gate, 196 frame, stucco dwellings in Gardendale Tract. Owner builds. $1,500,000.

Calif., San Lorenzo — RESIDENCES — Greenwood Corp., 859 San Mateo Dr., San Mateo, 50 residences, Via Alamitos, Via Lo Trancos, Via Dolorosa and Via Esperanzo, to David D. Bohannon, 859 San Mateo Dr., San Mateo, Approx. $335,000.

▲ **Fla., Tallahassee**—HOTEL—Duval Hotel Corp., c/o contractor, hotel, to Mangham-Butler Inc., 900 N. W. 47 Ave., Miami. Approx. $1,100,000.

Ga., Atlanta—APARTMENT UNITS—Oak Knoll Apartments, c/o contractor 56 apartment units, to O. T. Hennessee, Jr., 348 E. Paces Ferry Rd., Atlanta, Approx. $400,000.

Ill., Chicago—HOME ADDNS.— Daughters of Charity of St. Vincent de Paul, 2822 W. Jackson St., Zone 12, 3 story, brick, steel rest home addns., to E. H. Marhoefer Jr. Co., 505 N. LaSalle St., Zone 10. $250,000. A. E. Benson, 6319 S. Ashland St., Zone 21, archt.

Ill., Chicago—SHOPPING CENTER—Lincoln Village shopping Center, Lincoln and McCormick Sts., Zone 45, foundations only for 1 story, brick, terra cotta, stone shopping center, 34 stores, and motor court, to Industrial Constructors, Inc., 10620 S. Western St., Zone 43, Approx. $300,000. Awarded 12/20. Howard T. Fisher & Assoc., 322 W. Washington St., Zone 6, archts.

Ill., Glenview—SHOPPING CENTER—Cain & Culhaine, Inc., 608 S. Dearborn St., Zone 5, masonry contract drive-in shopping center, Waukegan and Glenview Rds., to Erland Peterson, 4881 N. Paulina St., Chicago, Zone 40, $300,000. Clarence L. Dahlquist & Assocs., 430 N. Michigan St., Chicago, Zone 11, archts.

Ind., Anderson—EDUCATIONAL UNIT—First Methodist Church, 12 St. at Jackson St., 2 story, bsmnt. educational bldg., to A. J. Glaser Constr. Co., Anderson Bank Bldg. $253,000. Awarded 1/6. CD 10/27.

La., New Orleans—APARTMENTS—Shelby Constr. Co., 4400 Paris Ave., 2 apartment bldgs. near Canal St., Owner builds, over $300,000.

▲ **Mass., Boston**—LABORATORY—Massachusetts General Hospital, Fruit St., brick, steel, laboratory for Cancer Research, Allen and Blossom Sts., to Turner Constr. Co., 38 Newbury St. $2,000,000. CD 12/8.

Mass., Springfield — HOUSING — Burnside Biulding Corp., 315 Breckwood Blvd., approx. forty 1 story, frame houses, Gifford St. and Burnside Terrace, Owner builds, $250,000, Kane & Fairchild, 49 Pearl St., Hartford, archts.

▲ **Minn., Rochester**—CLINC—Mayo Properties Assn., Rochester 10 story clinic to Stocke & Olson, Rochester. $12,000,000. Ellerbe & Co., E. 505 First National Bank Bldg., St. Paul and Rochester, archts.

Pa., Pittsburgh—APARTMENT—Cornell & Buchanan, Inc., 438 Winterhill St., 3 story, bsmnt., brick apartment, Mount Lebanon Twp. to Larson Constr. Co., 438, Winterhill St. Approx. $250,000. Tennyson & Van Wart, 633 Washington Rd., Zone 16, archts.

Tenn., Chattanooga — HOMES — Red Bank Development Co., c/o C. F. Griffin, N. Moore Rd., 75 homes. Owner builds. $500,000.

Tenn., Chattanooga—HOMES—Norman A. Thomas, c/o contractor, 50 homes in Riverside Park sub-division to Verhey Constr. Co., 801 Bluff St. Approx. $250,000.

Tex., Houston—HOUSING—Hans Frohlich Co., 3726 Jensen Dr., Negro housing. Owner builds. Approx. $250,000. CD 1/6.

Tex., Houston—SHOPPING CENTER—River Oaks Corp., c/o Hugh Potter, River Oaks Blvd., addn'l shopping center, own forces. Approx. $700,000. CD 1/6.

Tex., Houston—DWELLINGS—P. C. Stewart, 5308 Carrollton St., 100 dwellings, along Gulf Freeway, own forces. $750,000. CD 3/23/49.

Tex., San Antonio—HOUSING—U. S. Land Co., Transit Tower, housing, own forces. Approx. $250,000. CD 11/11.

W. Va., Charleston—STORE, etc.—West Virginia Coal Land Co., c/o contractor, joint store and apartment to Kuhn Constr. Co., Inc., Kanawha Valley Bldg., Charleston, Approx. $250,000.

Wis., Milwaukee—APARTMENT—Tilton Gardens, Inc., 3107 N. 27 St., Zone 16, thirty-one 1 story, 24x25 ft., frame 153 unit apartment bldgs., to Thos. H. Bentley & Son, Inc., 313 W. Mill Rd., Zone 9.

Ont., Toronto—APARTMENT—Monarch Constr. & Realty Co., Ltd., Confederation Life Bldg., 6 story, brick, concrete block 6-8 suite apartments, and service station in connection with Trethewey Drive development, own forces. Approx. $675,000. J. E. Hoare, Jr., 481 Eglinton Ave. W., archt.

INDUSTRIAL BUILDINGS

BIDS ASKED

Ga., Atlanta — WAREHOUSE — B.A. 1/26 — Warehouse Realty Co., c/o Fuller & Beckett, archts., 88 Walton St. N. W., warehouse addn. Plans deposit $25.

Minn., Melrose—OFFICE—B.A. 1/31—Stearns Co-operative Assn., Melrose, A. Holggren, 1 story R.E.A. office. $100,000. Plans deposit $15. CD 9/8.

Md., Baltimore—SHOP and OFFICE—Bids Asked—Dietrich Bros., Inc., H. Buckley & J. C. Dietrich, 220 E. Pleasant St., Zone 2, 1 story, 30x51 ft. brick, limestone shop, incl. garage in bsmnt.; 2 story, 122x471 ft., brick, limestone office bldg., incl. pent house, $200,000. John Carroll Dunn, 717 Washington Pl., archt.

Que., Montreal—FACTORY—Bids Asked—G. W. Patterson, c/o Refractories Eng. & Supplies, Ltd., 1265 Stanley St., 1 story 60x104 ft. concrete, steel, brick factory, $75,000. Luke & Little, 1410 Guy St., Montreal, archts.

SOON LETS CONTRACT

Calif., San Francisco—WAREHOUSE—Libby, McNeill & Libby, 60 California St., soon lets contract 1 story, mezzanine, steel frame warehouse. Approx. $68,000. W. D. Peugh & Assoc., 1333 Montgomery St., archts.

Pa., Sharpsburg—WAREHOUSE—United Motors Service, Div. General Motors Corp., General Motors Bldg., Detroit, Mich., soon lets contract 1 story steel frame, brick, concrete, parts warehouse Freeport Rd. $250,000. Argonaut Realty Div., General Motors Corp., Research Bldg. A. Detroit, Mich., archt.

S. C., Edgefield—SALES, SERVICE—Tim Motor Co., c/o Willis Irvin & Helen S. Irvin Assoc., archts., Greene St., Augusta, Ga., soon lets contract auto sales and service bldg.

▲ **Tex., Dallas**—WAREHOUSE, etc.—International Harvester Co., 180 N. Michigan Ave., Chicago, Ill., soon lets contract 200,000 sq. ft. warehouse or wholesale parts depot. $1,000,000. Fred V. Prather, c/o owner, engr. CD 12/20.

Tex., Galveston—PLANT—Galveston Wharves, Inc., 2402 Mechanic St., soon lets contract 5 story 100x175 ft. tea plant. $500,000. Lipton Tea Co., 2324 Strand St., lessees. R. W. Naef, Masonic Temple, Jackson, Miss., and Claude H. Lindsey, 5009 Almeda Rd., Houston, assoc. archts. CD 12/23.

LOW BIDDERS

Ala., Tuscaloosa—WAREHOUSE—Sears, Roebuck & Co., Ponce de Leon Ave., Atlanta, Ga. rejected bids Dec. 9, warehouse. CD 12/16, under LB.

La., New Orleans—WAREHOUSE—Sharp & Dohme, Inc., c/o H. Van Rappard, archt., Godchaux Bldg., New Orleans, rejected bids Jan. 4, LB. $85,742. CD 12/30.

S. C., Spartanburg—PLANT—Goodwin Truck & Tractor Co., c/o low bidder, plant from Mason & Holden, Spartanburg, $86,800.

Tex., Houston—AUTO SHOP, SALES, SERVICE—Lester Goodson Pontiac Co., 1117 San Jacinto St., Jan. 4, auto shop, sales, service, from Van Cleave Constr. Co., 6514 Telephone Rd., $184,987. CD 12/20.

CONTRACTS AWARDED

Ala., Phenix City—MILL—Shalon Joseph c/o Lovin D. Raines, 2443 Wynnton Rd., Columbus, Ga., hosiery mill, to J. D. Stillwell, Auburn Rd. Approx. $100,000. Bids 11/1. CD 10/25.

Calif., Los Angeles—PLANT—General Paint Corp., 3990 E. Washington Blvd., 70,000 sq. ft., steel frame, mfg. plant, to Paul W. Speer, 4201 Sunset Blvd. $259,922. Est. over $200,000. Bids 10/19, awarded 1/3. CD 10/19.

Conn., Hartford—PUMPING STATION—Hartford Electric Light Co., 266 Pearl St., 1 story, brick, concrete, steel pumping station, South Meadows, to Stone & Webster Eng. Corp., 49 Federal St., Boston, Mass. $165,000.

Ill., Aurora—PLANT—Garbe Iron Wks., 618 LaFayette St., brick, steel, concrete plant addn., to Charles C. Smith & Son, 619 Woodlawn St. $68,000. Awarded 12/30.

Ill., Chicago—PLANT—Link-Belt Co., 333 W. Pershing Rd., Zone 15, 1 story, steel, brick plant addn., to Rune & Sons, Inc., 6760 Stony Island Ave., Zone 49, $70,000. M. S. Carstens, 1 N. Lasalle St., Zone 2, archt.

Ind., Muncie—PLANT—Warner Gear Div. Borg Warner Corp., First and Elm Sts., brick, steel bldg. at Plant 3, Yorktown Rd., to Indiana Bridge Co., Muncie. Approx. $80,000. CD 10/28.

Md., Baltimore—GARAGE—Epps Parking Co., 206 W. Fayette St., Zone 1, rein.-con. parking garage, Park Ave. and Mulberry St., to Charles R. Schrivener Co., Inc., 339 St. Paul Pl., Zone 2, $100,000. Harry L. Katz, 3212 Gwynns Falls Parkway, engr.

Minn., St. Paul—WAREHOUSE, GARAGE—Hancock-Nelson Mercantile Co., 2117 Charles St., superstructure of warehouse, garage, 299 Territorial Rd., to F. O. Watson, 450 Baker Bldg., Minneapolis. $208,300. Bids 1/3. CD 12/21.

Mo., St. Louis—WAREHOUSE—Jackes-Evans Mfg. Co., 4427 Geraldine Ave., Zone 15, 1 story, 160x238 ft., steel concrete warehouse, 4401 Geraldine Ave., to L. O. Stocker Co., 3928 Lindell Blvd., Zone 8. Hugo K. Graf, 2825 Olive St., Zone 3, archt.

Mo., St. Louis—PARKING GARAGE—Mandel Investment Co., M. H. Mandel, pres., 2120 Locust St., Zone 3, remodeling, constructing floors for 4 story, bsmnt. parking garage, 908 St. Charles St., to John Hill Constr. Co., Syndicate Trust Bldg., 915 Olive St., Zone 1. Neal J. Campbell, 911 Locust St., Zone 1, engr. CD 8/15.

Pa., Carnegie—PRESS—Perlite Mfg. Co., Carnegie, 100x160 ft. bldg., alterations, Click St. Owner builds. Est. 100,000.

Pa., Glenshaw—WAREHOUSE—Glenshaw Glass Co., Route 8, 1 story, 114x260 ft., steel warehouse, Route 8. Owner builds. $100,000.

▲ **Pa., Pittsburgh** — WAREHOUSE — Pennsylvania R.R. Co., J. L. Gressitt, ch. engr. Broad St. Station Bldg., 1617 Pennsylvania Blvd., Phila., Zone 4, two 1 and 2 story, brick, concrete warehouses, concrete frame,

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- Ideal for Concrete Work
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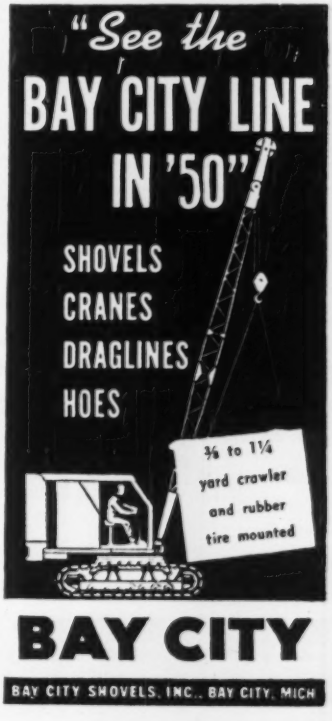

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Both are accomplished in this large capacity Rogers Trailer, yet it is only 8 feet wide to conform to the requirements of some states.

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Liberty Ave., 12 to 16 Sts., to The Trimble Co., 1719 Penna. Ave. Approx. $4,500,000. CD 12/15/48.

Tenn., Memphis—SALES, SERVICE—Hudson Sales Corp., c/o E. L. Harrison, archt., 81 Madison Bldg., auto sales and service bldg. to Seth E. Giem & Assoc., Porter Bldg. Approx. $150,000.

Tex., Cleburne—PLANT—Limestone Products Co., Cleburne, plant expansion, force account. Approx. $135,000.

▲ **Tex., Handley**—GENERATING PLANT—Texas Electric Service Co., Electric Bldg., Fort Worth, 75,000 kw. generating plant extens. to Harry B. Friedman Constr. Co., 1510 W. 10 St., Fort Worth. Approx. $4,250,000.

Tex., Hearne—PLANT—General American Transportation Co., Hearne, tank car plant, repair shop, own forces. $85,000.

Tex., Houston—WAREHOUSE—Stauffer Chemical Co., M & M Bldg., warehouse, to Metallic Building Co., 4601 Holmes Rd. $116,000; fdn. for warehouse, to Brown & Root, Inc., Box 3, $55,000. CD 12/20.

Tex., Port Arthur—WAREHOUSE—Co-operative Associated Grocery Stores, Port Arthur, warehouse, to L. L. Jameson Co., Port Lavaca. $263,000. CD 8/16.

Tex., Sweetwater—PLANT FDN.—United States Gypsum Co., Sweetwater, rein.-con. fdn. for 600 ft. long wallboard mfg. plant, to Balfanz Constr. Co., Abilene. Approx. $110,000. CD 1/9.

Va., Richmond—WAREHOUSE, etc.—Co-operative Seed & Farm Supply Service, Southern States Bldg., warehouse and office, to E. L. Bass & Bros., 708 Bainbridge St., South Richmond. Approx. $230,000. Bids 12/23, awarded 12/27. C. W. Huff, Jr., 105 E. Cary St., archt.

UNCLASSIFIED

BIDS ASKED

Mass., East Boston—STADIUM—B. A. 1/24—Commonwealth of Mass., Wm. F. Callahan, comr. Dpt. P. Wks., 100 Nashua St., Boston, site development and stadium for recreation center, East Boston approach to General Logan Airport, $400,000. Plans deposit $10. CD 4/13/48.

SOON LETS CONTRACT

Ga., Manchester—CONTROL TOWER CENTER—Atlantic Coastline R. R. Co., B. E. Widder, ch. engr., Wilmington, N. C., soon lets contract control tower center.

LOW BIDDERS

† **California**—CIRCUIT BREAKERS—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo. Schedule 1, two circuit breakers for Tracy Switchyard, Central Valley Proj., in Bethany, Spec. 2824, from Westinghouse Electric Corp., Gas & Electric Bldg., Denver, Colo., $136,000. CD 12/14.

Calif., Long Beach—ATHLETIC FIELD IMPRVS.—City Bd. Educ., 715 Locust Ave., Dec. 29, athletic field imprvs. at Long Beach City College, from Calowell Constr. Co., 1835 E. Wardlow Rd., $337,941, Est. $200,000. CD 12/15.

Kansas — RURAL DISTRIBUTION LINES — Wheatland Electric Co-operative, Scott City, Dec. 20, 81.3 mi. rural distr. lines and 4 sub-stations, Scott, Lane, Wichita, Greeley and Hilton Counties, from R. E. Mattison Co., Britton, Okla., $346,626. CD 12/14.

Texas—RURAL DISTRIBUTION LINES—Robertson Electric Co-operative, Inc., Franklin, Jan. 3, 91 mi. rural distr. lines, Freestone, Leon, Robertson and Limestone Counties, from Texu Electric Co-operative, Conroe, $96,300. CD 12/20.

† **Wyoming** — TRANSMISSION LINE — Bureau Reclamation, Dpt. Interior, Cody, Jan. 4, constr. Boysen-Thermopolis 115-kilovolt transmission line, Transmission Division, Missouri River Basin Proj., near Thermopolis, Spec. 2856, from Malcolm W. Larson, 5200 Morrison Rd., Denver, Colo., $171,650. CD 12/6.

B. C., Port Renfrew—WHARF—Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., Jan. 4, wharf reconstruction, from James McDonald Constr. Co. Ltd., 625 Fort St., Victoria, Approx. $53,590. CD 12/13.

Que., Baie St. Catherine—WHARF—Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., Jan. 4, wharf reconstruction, from Santo F. Walters, 18 Bon Air, Ste. Foy, Quebec City, Approx. $366,000. CD 12/13.

CONTRACTS AWARDED

Ala., Troy—STADIUM—City, c/o Joe Frank Walters, Troy, 5,000 seating concrete football stadium, Owner builds, $60,000.

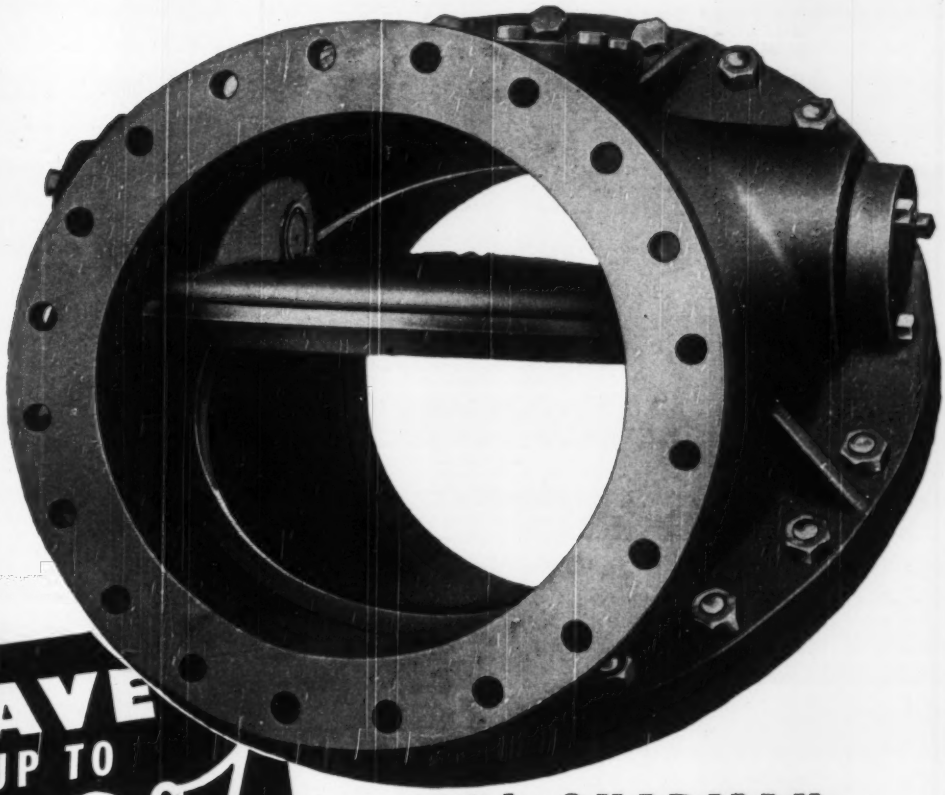
Mississippi — RURAL DISTRIBUTION LINES — Tippah Electric Power Assn., Ripley, 382.6 mi. rural distr. lines, Tippah, Benton and Alcorn Counties, Miss.; Hardeman Co., Tenn., to Southern Line Constr. Co., 62 Auction Ave., Memphis, Tenn., $373,737. CD 7/14/49.

N. Y., Oyster Bay—BATHHOUSE, etc.—Bd. Supervs., Town Hall, bathhouse, comfort station etc., Tobay Beach, to Gardner Constr. Corp., 4 Platt St., New York, $99,513. Bids 12/13. CD 11/30.

Pa., Pittsburgh—ATHLETIC FIELD, etc.—Bd. Educ., Forbes and Bellefield St., athletic field and field house, incl. football field, track, steel, concrete bleachers, to Fraser Eng. Co., 95 S. 16 St., $414,000. Est. $505,237.

Tex., Brownsville—TELEVISION STATION—Brownsville Television Co., Brownsville, commercial television station, own forces. Approx. $75,000.

▲ **Tex., Fort Worth**—TRANSMISSION LINE—Texas Electric Service Co., Electric Bldg., 60,000 kva. transmission line around city, force account. $1,300,000. Est. $2,000,000. CD 1/6.



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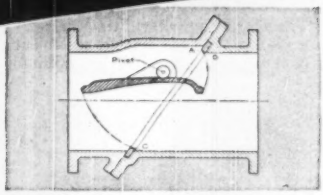

Cross-section of the Chapman Tilting Disc Check Valve illustrating the way that the balanced disc is supported on the pivot, with arrows showing the travel of the disc. A feature of the design is that the disc seat lifts away from the body seat when opening, and drops into contact when closing, with no sliding or wearing of the seats.

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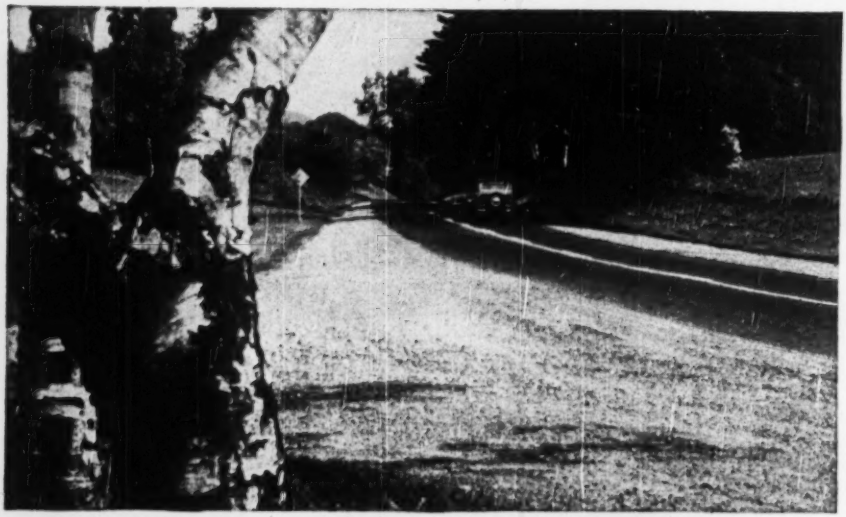

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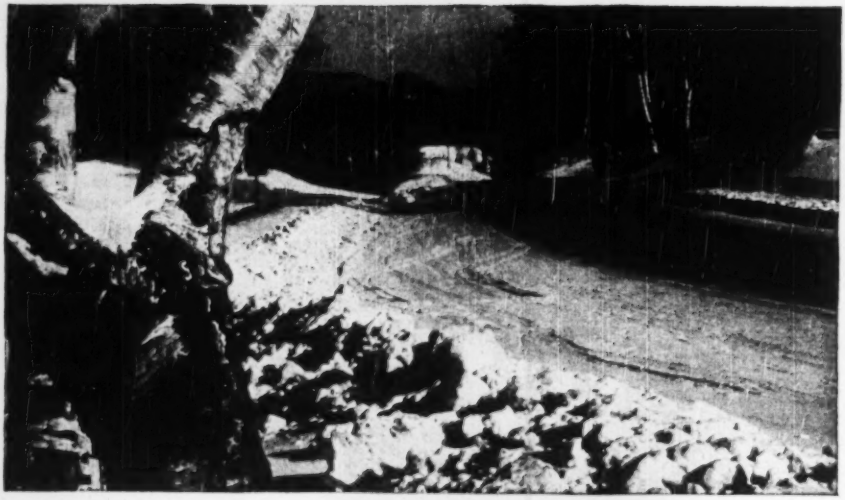

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CONSTRUCTION REPORTS—Third Section

WATER SUPPLY

BIDS ASKED

Colo., Monte Vista—B.A. about 2/1—City, municipal water plant, $400,000. Engineers, Inc., 318 Central Bldg., Pueblo, archt. and engr. CD 8/8.

La., Gretna—B.A. 2/2—East Jefferson Waterworks Dist. 1, Jefferson Hy. and Arnoult Rd., Jefferson Parish, water purification plant addns. Plans deposit $50. S. V. Applewhite, 424 Millaudon St., New Orleans, engr.

† **Oregon**—B.A. 2/10—U. S. Eng., Pittock Block, Portland, design, fabrication, erection, 20,000 gal. elevated steel water tank on concrete footings at Bonneville Dam, Multnomo. CIVENG-35-026-50-2091.

Pa., Phila—B. A. 2/10— Dpt. Pub. Wks., City Hall Annex, Queen Lane filter plant repairs. Approx. $28,000. Elbert J. Taylor, c/o owner, Water Bureau Chief. CD 8/9/46.

Tex., Houston—Bids Asked—S. N. Adams, 3713 Inwood St., c.i. waterlines, facilities. $40,000. Howe & Wise, 4119 San Jacinto St. engrs.

LOW BIDDERS

Calif., Calexico—City, 408 Heber Ave., Jan. 3, 2 water storage reservoir, from Hoagland-Findlay Eng. Co., 3254 Cherry Ave., Long Beach, $109,540; water treatment plant and filter basin, from Offco Constr. Co., Inc., 2650 Cherry Ave., Long Beach, $119,675. CD 12/16.

Ga., Dublin—J. P. Stephens, Co., Dublin, Jan. 5, waterworks plant, from McKoy-Helgerson Co., Greenville, S. C., $124,000. CD 12/30.

† **N. M., Albuquerque**—U. S. Eng., P. O. Box 1538, Jan. 4 water supply sys., Serial No. Eng-29-005-23, from Robert E. McKee, Box 562, El Paso, Tex., $210,900. CD 12/21.

CONTRACTS AWARDED

Conn., Mansfield—State of Connecticut, R. S. Thatcher, comptroller, State Capitol, Hartford, well pumping station incl. approach road, Mansfield State Training School, B/A X35, to Charles Oak Constr. Co., Inc., 525 Main St., Hartford, $39,628. Bids 1/3.

Ky., Richmond—Richmond Water & Gas Works., intake and water supply line from Blue Grass Ordnance Depot Lake Madison Co. to City of Richmond's Lake Reba to Sheiby Constr. Co., 809 Manchester St., Lexington, $76,076. Est. $85,000. Bids 11/30, awarded 12/3.

Mass., Fall River—City, Watuppa Water Bd., 1620 Bedford St., water sys., repairing pumping station and wall, Pleasant St. Pumping Station, to C. L. Guild Constr. Co., 94 Water St., Providence, $29,500; causeway wall to T. W. Kidd, Jr., 144 Williston St., $38,774, Drummey-Duffill, Inc., 80 Boylston St., Boston, engr.

N. B., Fairy Brae—Municipality, watermains, etc., to Rayner Constr. Co., Ltd., Moncton, $50,000.

Que., St. Foy—Laval University, watermains, etc., to Komo Constr. Ltd., 1500 St. Vallier St., Quebec City, $100,000.

SEWERS, WASTE DISPOSAL

BIDS ASKED

Ill., Chicago—B. A. 1/27—City, Dpt. of Purchases, Contracts & Supplies, City Hall, auxiliary outlet sewers Kostner Ave. System Contr. 2 A. Plans deposit $50. CD 3/19/45.

▲ **Mich., Detroit**—B.A. 1/31—Huron Clinton Metropolitan Auth., 1750 Guardian Bldg., Detroit, sewage treatment plant, booster station and outfall sewer, Harrison Twp., St. Clair Metropolitan Beach, Macomb Co., $100,000. Plans deposit $25.

▲ **Wis., Milwaukee**—B. A. 2/2—Sewerage Comn. of City of Milwaukee P. O. Box 209, Zone 1, aeration and sedimentation tank exten. to sewage treatment plant, incl. operating galleries, piping, sluice gates and valves. Approx. $1,000,000. Plans deposit $50. Raymond D. Leary, acting ch. engr. CD 12/3/43.

† **Washington**—B.A. 2/3—U. S. Eng., 4735 E. Marginal Way, Seattle, Zone 4, sewage treatment plant, trunk sewer, water supply pump house, storage reservoir and watermain to serve construction area of Chief Joseph Dam, Bridgeport, CIVENG—45-108-50-48. CD 9/12/44.

N. Y., New York—B. A. 2/9—Dpt. Pub. Wks., Municipal Bldg., Zone 7, Throgs Neck Intercepting Sewers and Pumping Station, Hunts Point Sewage Treatment Works, Bronx Boro. Plans deposit $20. CD 12/24/44.

† **N. M., Las Cruces**—B.A. About 2/15—U. S. Eng., P. O. Box 1538, Albuquerque, sewage disposal plant (White Sands Proving Grounds, NAV-94), Serial No. Eng-29-005-50-30. Plans deposit $10.

▲ **N. J., Phillipsburg**—B.A. 2/15—Mayor and Board Comrs., Town Hall, sewage treatment plant and main pumping station, $300,000. William A. Goff, Inc., Broad St. Sta. Bldg., Phila., 3, Pa., engrs; adv. ENR 1/19. CD 1/31/47.

Tex., Kerrville—B.A. 2/15—City, City Hall, sewer plant, $175,000; sanitary sewer line extens., $225,000. H. R. F. Helland, 302 Frost Natl. Bank Bldg., San Antonio, engr. CD 10/21/48.

† **Washington** — B.A. 2/17 — U. S. Eng., 3735 E. Marginal Way, Seattle, Zone 4, sewage treatment plant, trunk sewer, water supply pump house, storage reservoir and watermain to serve construction area of Chief Joseph Dam, Bridgeport, CIVENG-45-108-50-48. Extended date. CD 12/28.

Conn., Fairfield—B. A. 2/23—Purchasing Authority and Sewer Comn., at office Bd. Selectmen, Town Hall, 611 Old Post Rd., constr. sewage works, Contr. II—sewage treatment plant; Contr. III—outfall sewer. Plans deposit $15. Bowe, Albertson & Assoc., 110 Williams St., New York, N. Y., engrs. CD 1/9/47 adv ENR 1/19.

Tex., Houston—Bids Asked—S. N. Adams, 3713 Inwood St., sanitary and storm sewers. $65,000. Howe & Wise, 4119 San Jacinto St., engrs.

LOW BIDDERS

Calif., Los Angeles—City, City Hall, Jan. 4, slope protection at Hyperion Sludge Plant, from Henry C. Soto Corp. 13,000 Avalon Blvd., Los Angeles, $78,187, est. $100,000. CD 12/20.

† **Me., Togus**—Veterans Admin., Munitions Bldg., Wash. 25, D. C., Jan. 10, sewage treatment plant for Veterans Admin. Center, Proj. 1-409, from Samuel Aceto & Co., 40 Trebie St., Portland, Me., $179,000. CD 11/30.

Md., Hyattsville—Washington Suburban Sanitary Comn., Hamilton St., Jan. 9, Contr. 243-S, approx. 235 ft. 6 to 15 in. sewers, 5,435 R. C. C. P. and 2,315 ft. 36 in. R. C. C. P. X. sewers, Northeast Branch Trunk Sewer from Lincoln Ave., Riverdale to Paint Branch, Hyattsville and Berwyn Dist., from Leo Butler Co., 816 Georgia Ave., Silver Spring, $116,784. CD 12/29.

Md., Towson—Comrs. Baltimore Co., Court House, Towson, Jan. 4, Contr. 138-D, Merritt Ave., storm drains, approx. 1,600 cu. yds., earth channel excav., 390 ft. 18 to 24 in. r.c.c.p. 1830 ft. 30 to 54 r.c.c.p., 1,450 ft. 60 in. r.c.c.p. inlet manholes, misc. items, near Baltimore, from B. & W. Constr. Co., Inc., 101 Hamilton Bank Bldg., Baltimore, $70,912. CD 12/29.

CONTRACTS AWARDED

Pa., Havertown—Haverford Twp. Comrs., 2325 Darby St., Oakmont, sanitary sewer Bon Air to Louis Mariani, 801 Loraine Ave., Ardmore Park, $87,628.

Pa., Sunnytown—Campe Green Lane, 5539 Chestnut St., Phila., sewage disposal sys. to Continental Constr. Co., 1539 Race St., Phila. $50,000. William A. Goff, Inc., Broad St. Station Bldg., Phila., engr.

BRIDGES

BIDS ASKED

STATE HIGHWAY LETTINGS

BIDS ASKED

January 24	January 27
West Virginia	Kentucky
	Pennsylvania

▲ **New Jersey**—B.A. 1/31—New Jersey Turnpike Auth., 15 Prospect St., Trenton, Contr. 2 graded borrow excav., materials in embankment, stabilizing with sand drains, from North Abutment proposed Passaic River structure to south abutment proposed Hackensack River Structure at Kearny, N. J., Contr. 5, constructing 2 river piers, foundations, fenders and incidental work for Passaic River Bridge, Newark, Essex Co. and Harrison, Hudson Co., Contr. 6 four river piers and 2 fenders in connection with Turnpike Route over Hackensack River near Laurel Hill, Hudson Co. CD 7/17, under Streets and Roads.

LOW BIDDERS

Maine—Bureau P. Rds., Dpt. Commerce, c/o Acadia National Park Office, Bar Harbor, Dec. 20, 2 rein. con. structures with stone facing, 0.15 mi. and 0.47 mi. roadwork, Proj. 10A2-10A3-10A5, Hancock Co., from Harold MacQuinn, 12 Holland Ave., Bar Harbor, $157,468. CD 12/1.

Massachusetts—Commonwealth of Mass., Dpt. P. Wks., Boston, Dec. 20, bridge approaches on Ave. A, Montague, from Mackin Sand & Concrete Products Co., 349 Main St., Greenfield, $62,276. CD 12/14.

STREETS AND ROADS

BIDS ASKED

STATE HIGHWAY LETTINGS

BIDS ASKED

January 24	Pennsylvania
West Virginia	January 31
January 25	Pennsylvania
Louisiana	
January 27	February 1
Kentucky	Kansas

O., Toledo—B.A. 1/24—City, City Hall, paving Union Station Plaza and approaches. $132,000. M. J. Curtis, c/o owner, city street div. engr. CD 10/14/48.

Pennsylvania—B. A. 1/31—Pennsylvania Turnpike Comn., 11 N. 4 St., Harrisburg.

Beaver Co.—grading, drainage, paving, structures, approx. 5.22 mi. Sect. 29E, Western Extens. of Pennsylvania Turnpike from point approx. 2,077 ft. west of Twp. Rd. 609, North Sewickley Twp., in an easterly direction 27, 547 ft. to point approx. 351. ft. west of L. R. 04011, (T. R. 989).

grading, drainage, paving, structures 3.97 mi. Turnpike Sec. 29D. Western Extens. from point approx. 650 ft. east of the centerline of Beaver River Easterly 21,002 ft. to point approx. 2,077 ft. west of Township Rd. 609, N. Sewickley Twp.

Beaver and Butler Counties—construct structures, grading, drainage, paving approx. 3.85 mi. Sec. 30 A, Western Exten. Pennsylvania Turnpike, from point approx. 351 ft. west of L. R. 04011 (T. R. 989) in New Sewickley Twp., Beaver Co., easterly 20,317 ft. to point approx. 3,000 ft. west of L. R. 10002, CranberryTwp., Butler Co.

Butler Co.—cosntruct grading, drainage, paving, structures approx. 2.44 mi. Turnpike Sec 30 B, Western extens. of Pennsylvania Turnpike from point approx. 3,000 ft. west of L. R. 10002 in Cranberry Twp., easterly 12,903 ft. to point at Butler-Allegheny county line in Cranberry Twp. Plans deposit $10 each. R. B. Stone, c/o owner, ch. engr.

Ala., Mountain Brook — B.A. 2/13 — City, Mountain Brook, improv. Church St., Fairmont Dr. and Braddock Ave. Plans deposit $25. J. W. Goodwin Eng. Co., 726 S. 29 St., Birmingham, engrs. CD 7/26/46.

Tex., Houston—Bids Asked—S. N. Adams, 3713 Inwood St., construct and pave streets. $75,000. Howe & Wise, 4119 San Jacinto St. engrs.

LOW BIDDERS

Massachusetts—Commonwealth of Mass., Dpt. P. Wks., Boston, Dec 20, hy. and bridge wk. on Cole Ave., Williamstown, from Petricca Constr. Co., 534 West St., Pittsfield, $67,443. CD 12/21.

CONTRACTS AWARDED

▲ **Massachusetts**—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston, reconstr. of Sullivan Sq. and vicinity, U-341 (1), Charlestown, to M. De Matteo Constr. Co., 200 Hancock St., Quincy, $4,133,550. Bids 12/20, awarded 1/3. CD 12/15.

Massachusetts—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston, state hy. and br. constr., U-272 (18), Lynnfield-Wakefield, to A. V. Tauraso Co., Inc., 139 Jacques St., Somerville, $960,035, Bids 12/14, awarded 12/28. CD 12/7, under LB.

Massachusetts—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston, hy. and 3 bridges, Rte. 6, Sandwich, to Campanella & Cardi Constr. Co., 780 Jefferson Blvd., Hillsgrove, R. I., $634,706, Bids 12/13, awarded 12/20. CD 12/1.

Massachusetts—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston, state hy. constr., Rte 138, Berkeley-Freetown, to L. Romano Constr. Co., 2327 Pawtucket Ave., East Providence, R. I., $594,353, Bids 12/6, awarded 12/14. CD 11/25.

▲ **Massachusetts**—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston, hy. and bridge constr., FA U-272 (21), Needham, Wellesley, Newton, Weston, to V. Barletta Co., Roslindale, $3,032,419, Bids 1/5. CD 12/21.

Que., Aylmer—Municipality, road reconstruction, to Lanson Constr. Co., Ltd., 428 Rideau St., Ottawa, Ont., $50,000. Ste. Marie & Lanctot, 63 Main St., Hull, engrs.

EARTHWORK, WATERWAYS

BIDS ASKED

† **South Dakota**—B.A. 1/31—U. S. Eng., 1709 Jackson St., Omaha, Neb., fire reporting sys., Fort Randall Dam Proj. Inv. 110.

† **Maryland**—B.A. About 2/1—U. S. Eng., 1 and Douglas Sts., Wash. 25, D. C., excav. 4,700 cu. yd. rock, constr. 3 concrete monoliths in weir section and concrete bucket at lower end, install tile drainage sys., concrete spillway lining, concrete intake structure, gate chamber, steel stairway, hydraulic gates, operating house, power plant, Savage River Dam.

† **Massachusetts**—B.A. About 2/1—U. S. Eng., 80 Lafayette St., New York 13, N. Y., stilling basin and drop structure 2,800 cu. yd. rein.-con. 14,000 cu. yd. structure excav., 50,000 cu. yd. channel excav., 6,200 cu. yd. boulder removal, appurtenance North Adams Flood Protection Proj., drop structure and walls, 2,600 cu. yd. rein.-con., 10,000 cu. yd. excav., 2,000 cu. yd. rubble paving, Adams Flood Protection Proj. CD 4/27/44.

† **New York**—B.A. About 2/1—U. S. Eng., 80 Lafayette St., New York, Zone 13, removing dam, construct rein.-con. wall requiring 2,700 cu. yd. concrete, 30,000 cu. yd. channel excav., Hoosick Falls, Flood Protection Proj.

† **Virginia and North Carolina**—B.A. About 2/1—U. S. Eng., P. O. Box 119, foot of Front St., Norfolk 1, Va., railroad relocation requiring 900,000 cu. yd. excav., construct embankment with track and stone protection, construct bridge, incl. 1,300 tons structural steel and placing 13,000 cu. yd. concrete, Buggs Island Reservoir. CD 8/3/44.

† **Mississippi**—B.A. 2/1—Bureau Pub. Rds., Dpt. Commerce, First National Bank Bldg., Florence, Ala., 22.264 mi. Proj. 3M9-3NT, Natchez Trace Parkway, Madison and Leake Counties, approx. 55,900 cu. yd. borrow for topping, 120,000 gal. tar, 78,700 tons type 1-3 hot b. conc. paving, Plans deposit $10.

† **Texas**—B.A. 2/1—U. S. Eng., 606 Santa Fe Bldg., Galveston, dredging Cow Bayou Channel of Sabine—Neches Waterway, Orange Co., Inv. No. CIVENG-41-243-50-127. Approx. $140,000. Extended date. CD 12/29.

† **Tennessee**—B.A. 2/2—U. S. Eng., P. Box 97, Memphis 1, Tenn., approx. 2,480 ft. ft. floodwall improv. Item No. L-932, CIVENG-40-41-50-85. Plans deposit $15. CD 12/19.

† **Md., Annepolis**—B.A. 2/2—Pub. Wks. Office, U. S. Naval Academy, Annapolis, dredging the area between Worthington and Dungan Basins to 30 ft. below mean low water station datum and disposal of dredged material behind earth dike adjacent to Worthington Basin; removing temporary pier, landing platform, 2 mooring platforms, and appurtenances, Spec. 23599, Plans deposit $10.

† **Oregon**—B.A. 2/2—U. S. Eng., 19 E. Poplar St., Walla Walla, Wash., construct levee in city of Union on right and left banks of catherine Creek. CIVENG-45-164-50-82. Union Co.

Tex., Harlingen—B.A. 2/2—Arroyo Colorado Navigation Dist. of Cameron and Willacy Counties, C. H. Purdy, chn., Box 708, clearing, grubbing, Port of Harlingen area. $30,000. CD 4/26/46.

† **Arkansas**—B.A. About 2/7—U. S. Eng., P. O. Box 97, Memphis 1, Tenn., riverside enlargement and roadway embankment 630,000 cu. yd. Station 181/40 and 186/0, Porter Lake, Item No. R-697, along right

bank of Mississippi River, Crittenden beginning at point on levee near south boundary of Porter Lake and approx. 10 mi. southeast of Hughes and extends down the levee approx. 4 mi., CIVENG-40-041-59-93.

† Ohio—B.A. 2/7—U. S. Eng., Niagara and Bridge Sts., Buffalo 7, N. Y., maintenance and new work dredging, Cuyahoga and Old Rivers, Cleveland Harbor, Serial No. CIVENG-30-023-50-27.

† Arkansas—B.A. 2/7—U. S. Eng., P. O. Box 97, Memphis 1, Tenn. placing approx. 630,000 cu. yd. earthwork in Lower St. Francis Levee Dist., Crittenden Co., Inv. Serial No. CIVENG-40-041-50-93. Extended date. CD 12/6.

Calif., Los Angeles—B.A. 2/7—Los Angeles Co. Flood Control Dist., 751 S. Figueroa St., constructing Cominguez Channel from Inglewood Ave. to Los Angeles Municipal Airport. Approx. $500,000. H. E. Hedger, ch. engr. CD 8/20/45.

† Kentucky—B.A. 2/7—U. S. Eng., Huntington Dist., Madison Ave., and 8 St. W., Huntington 18, W. Va., local protection proj., Section 2, incl. approx. 4,400 ft. earth levee approx. 3,600 ft. 27 to 54 in. interceptor sewers, and 4x4 ft. culvert about 325 ft. long, 2 concrete gate wells, in City of Maysville, Mason Co., along the left descending bank of the Ohio River, CIVENG 46-022-50-65. CD 12/30.

† Maryland—B.A. 2/7—U. S. Eng., 24 St. and Maryland Ave., P. O. Box 1715, Baltimore, Zone 3, maintenance and imprv. dredging Brewerstown and Fort McHenry Section, Patapsico River, located about 3 statute miles and 7 statute miles respectively southeas from Fort McHenry, Baltimore, and Riverview Anchorage 2, adjacent to area to be dredged in Fort McHenry Sect., CIVENG-18-020-50-16. CD 12/30.

† Ohio—B.A. 2/7—U. S. Eng., Niagara and Bridge Sts., Buffalo 7, N. Y., maintenance and new work dredging, Cuyahoga and Old Rivers, Cleveland Harbor, Serial No. CIVENG-30-023-50-27.

Pennsylvania—B.A. 2/7—Dpt. Forests & Waters, 404 Education Bldg., Harrisburg, channel rectification of Schuylkill River from New Kernsville impounding dam to Penn Street Bridge, city of Reading, Berks Co. $300,000. Plans deposit $10. Schuylkill River Project Engineers, 20 S. 15 St., Phila., engrs.

†Ohio—PUMP STATIONS, etc.—B.A. About 2/8—U. S. Eng., Madison Ave. and 8 St. West, Huntington 18, W. Va., pump stations, appurtenant work, levee protection works, Delaware Reservoir Proj., Waldo, Serial No. CIVENG-46-022-50-66. Plans deposit $10.

† Nebraska—B.A. About 2/9—U. S. Eng., 1709 Jackson St., Omaha, Zone 2, construct Florence Lake Pumping Station, near Omaha, Douglas Co., Spec. No. CIVENG-25-066-50-111.

† Ohio—B.A. About 2/9—U. S. Eng., Madison Ave. and 8 St. West, Huntington 18, W. Va., construct Storms Creek Bank Protection, Local Protection Proj., Ironton, Serial No. CIVENG-46-022-50-69.

†Tennessee—B.A. About 2/9—U. S. Eng., 303 U. S. Courthouse, Nashville, Zone 1, construct Cheatham Lock and access roads, 110x800 ft. lock with 800 ft. guide walls and approx. 800,000 cu. yd. excav., placing approx. 160,000 cu. yd. concrete, on Cumberland River, Cheatham and Dickson Counties, Serial No. CIVENG-40-058-50-29. Plans deposit $25.

† Arizona—B.A. 2/9—Bureau Reclamation, Dpt. Interior, Davis Dam, Nev., completion utility building, parking area and forebay channel bridge along the Colorado River approx. 30 mi. west of Kingman, Spec. 2885. Michael W. Straus, comr.; adv. ENR 1/12.

† Nebraska—B.A. 2/9—U. S. Eng., 1709 Jackson St., Omaha, Zone 2, Florence Lake Pumping Station, Unit AV, Area A, near Omaha, Inv. 25-066-50-111, CD 1/4.

† Washington—B.A. 2/10—U. S. Eng., 4735 E. Marginal Way, Seattle, Zone 4, design, mfg., delivery first ten 100,000 hp. hydraulic turbines for Chief Joseph Dam, Bridgeport, Inv. 50-4. CD 9/14/44.

† New York—B.A. On or About 2/14—U. S. Eng., 24 St. and Maryland Ave., P. O. Box 1715, Baltimore 3, Md., access road paving, Almond Dam, Canacadea Creek, approx. 3 min. west of Hornell, Steuben Co., Serial No. CIVENG-18-020-50-18.

† Tennessee—B.A. 2/14—U. S. Eng., U. S. Courthouse, P. O. Box 1070, Nashville Zone 1, construct Cheatham Lock. Serial No. CIVENG-40-058-50-29. CD 12/29.

† Conn., Winsted—B.A. On or About 2/15—U. S. Eng., Army Base, Boston 10, Mass., channel imprv. Mad River, Winsted. CIVENG-19016-50-32. CD 8-2-44.

† Florida—B.A. About 2/15—U. S. Eng., P. O. Box 4970, Jacksonville Levees L-35 and L-36, Central and Southern Florida Flood Control Proj., CIVENG-08-123-50-54.

† Conn., Winsted—B.A. 2/15—U. S. Eng., Bldg. 21, Naval Drydock, South Boston, Mass., channel imprvs. incl. 4,800 ft. rock fill pavement on excavated side to slopes and channel bed concrete 9 ft. high steel, concrete pier Mad River ENG-19 016-50-32. $150,000. Extended date. CD 1/9.

† New York—B.A. 2/15—U. S. Eng., 80 Lafayette St., New York, Zone 13, maintenance dredging approx. 234,700 cu. yds. all material except ledge rock from Newton Creek. No. Eng-50-079-50-70, Queens and Kings Counties.

† Maine—B.A. 2/16—U. S. Eng., New England Div., Army Base, Boston 10, Mass., rip-rap breakwater constr., Portland Harbor, Cumberland Co., CIVENG 19-016-50-34. CD 6/9/44.

▲ † Tennessee—B.A. 2/18—U. S. Eng., P. O. Box 97, Memphis, Zone 1, approx. 44,900 lin. ft. bank protection, consisting 2,425,000 cu. yd. grading, 32,500 cu. yd. gravel blanketing, 133,000 squares articulated concrete mattress, 22,000 lin. ft. grout joint filling and 31,000 squares riprap paving, Mississippi River and tributaries, Inv. No. CIVENG-40-041-5-75. Approx. $3,000,000-$4,000,000.

† Rhode Island—B.A. About 2/23—U. S. Eng., U. S. Army, Army Base, Boston 10, Mass., imprvt. dredging by hydraulic process at Point Judith Pond. Serial No. CIVENG-19-016-50-35. Est. $175,000.

† Delaware—B.A. About 4/25—U. S. Eng., P. O. Box 8269, City Centre Bldg., 121 N. Broad St., Phila., Pa., dredging 1,500,000 cu. yd. in Indian River Inlet and Bay, Delaware Bay. CD 11/3.

Michigan—B.A. about 3/1—U. S. Eng., 428 Federal Bldg., Milwaukee, Wis., constr. approx. 1,265 ft. steel sheet piling breakwater, dredging approx. 205,000 cu. yd. material other than ledge rock to form harbor basin to proj. depths of 10 and 15 ft. below L. W. D. near Traverse City. CD 6/9/44.

† Virginia—B.A. About 5/1—U. S. Eng., P. O. Box 119, foot of Front St., Norfolk, Zone 1, furnishing one 16,875 kva. transformer, Philpott Reservoir. CD 8/3/44.

† Massachusetts—B.A. 3/2—U. S. Eng., New England Div., Army Base, Boston, Zone 10, dredging Boston Harbor, Suffolk County, CIVENG 19-016-50-36. CD 4/10/44.

† Virginia—B.A. About 3/6—U. S. Eng., P. O. Box 119, foot of Front St., Norfolk, Zone 1, relocating 0.8 mi. secondary hy. incl. construction of 2 bridges crossing reservoir, Philpott Reservoir. CD 8/3/44.

† Massachusetts—B.A. 3/7—U. S. Eng., New England Div., Army Base, Boston 10, dredging Fall River Harbor, Bristol Co., CIVENG 19-016-50-37. CD 4/10/44.

† Pennsylvania—B.A. About 3/13—U. S. Eng., P. O. Box 8629, City Centre Bldg., 121 N. Broad St., Phila., Zone 1, construct embankment requiring 120,000 cu. yd. earth, installing 6,000 lin. ft. 36 and 60 in. rein.-con. sewer pipe, sluices and misc. facilities for 3 disposal areas, Plymouth and Flat Rock Pools, Schuylkill River, above Fairmount Dam.

† Virginia and North Carolina—B.A. About 3/15—U. S. Eng. P. O. Box 119, foot of Front St., Norfolk, 1, Va., structural steel, brick superstructure 73x612 ft., switchyard and appurtenant facilities, required for 108,000 kw. power installation, Buggs Island Reservoir. CD 8/3/44.

▲† Minn., Minneapolis—B.A. After 3/15—U. S. Eng., 1217 Post Office Bldg., St. Paul, St. Anthony Falls Lower Lock and Dam, Mississippi River, incl. upper and lower guide walls, gates, operating machinery, service bridge, etc., 110,000 cu. yd. excav., 90,000 cu. yd. concrete, 80,000 sq. ft. steel sheet piling, 3,000,000 lb. reinforced steel; 1,750,000 lb. structural steel, $5,000,000. CD 8/9.

† Virginia and North Carolina—B.A. About 4/3—U. S. Eng., P. O. Box 119, foot of Front St., Norfolk, 1, Va., permanent housing for operating personnel, Buggs Island Reservoir. CD 8/3/44.

†Minnesota—B.A. After 4/4—U. S. Eng., altering Red Lake Outlet Structure and raising Minn. State Hy. 1, installing 3 hand-operated steel lift gates, constr. concrete training walls, exten. downstream concrete apron and riprap protection of bottom and side slopes of channel; raising State Hy. 4 ft. for 19,000 lin. ft. north and 14,000 ft. south of outlet structure incl. 3,000 ft. section of side road Approx. $50,000. CD 4/21/44.

†Minnesota—B.A. After 4/11—U. S. Eng. 1217 Post Office Bldg., St. Paul, Zone 1, Stage No. 4, Red Lake River Channel Imprvt., deepening, widening, straightening river beginning at Red Lake outlet structure and exten. about 14 mi. downstream, about 500,000 cu. yd. excav. Approx. $28,000. CD 4/21/44.

† Delaware—B.A. About 2/28—U. S. Eng., P. O. Box 8629, City Centre Bldg., 121 N. Broad St., Phila., Pa., dredging 150,000 cu. yds. channel and turning basin in Harbor of Refuge. CD 11/3.

†North Dakota—B.A. River part April—U. S. Eng., Fort Lincoln, P. O. Box 300, Bismarck, stilling basin and powerhouse fdns.; Garrison Dam and Reservoir, Riverdale. Serial No. CIVENG-32-015-50-45. B.A. 2/10 rescinded. CD 12/7.

† Virginia—B.A. About 3/1—U. S. Eng., P. O. Box 119, foot of Front St., Norfolk, Zone 1, clearing approx. 1,130 acres reservoir area, Philpott Reservoir. CD 8/3/44.

† Wyoming and South Dakota—B.A. in Spring—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo.; Keyhole Dam on Belle Fourche River, approx. 10 mi. northeast of Moorcroft, Wyo.; Keyhole Unit, Cheyenne Div., Missouri River Basin Proj. L. N. McClellan, ch. engr. CD 5/25/44.

LOW BIDDERS

† Iowa—U. S. Eng., 1709 Jackson Ave., Omaha, Neb. Jan. 6, pumping station and sewer, Unit V, Section 5, at Carter Lake, Flood Control adjacent to Missouri River. CIVENG 25-066-50-101, from Council Bluffs Constr. Co., S. 17 St., Council Bluffs, $32,225. Est. $27,222. CD 12/8.

† Tennessee—U. S. Eng., P. O. Box 97, Memphis, Zone 1, Jan. 5, construct approach embankment from Riverside Blvd. to the closure dam of the harbor Proj., CIVENG-40-041-50-76 from Cobb & Weaver & Whitehurst, $32,547. CD 12/6.

† Tennessee—U. S. Eng., P. O. Box 97, Memphis, Zone 1, Jan. 5, construct three 3 row permeable pile dikes, approx. 72,000 lin. ft. treated piles, on left bank of the Mississippi River, at Head of Presidents Island City of Memphis, Shelby Co. CIVENG-40-041-50-72 from Taylor-Wheless Co., Hy. 80 W, Jackson Miss. $105,840. CD 12/6.

† Texas—U. S. Eng., 606 Santa Fe Bldg., Galveston, Jan. 6, dredging Texas City Channel from sta. 1 plus 500 to station 33 plus 000, in Galveston Co. CIVENG-41-243-50-101 from Standard Dredging Corp., 80 Broad St., New York 4, N. Y. $173,255 ***dredging approach channel to Port Arthur turning basins, Port Arthur east and west turning basins, connecting channel from west turning basin to and incl. Taylors Bayou Turning Basin and Sabine-Neches Canal. CIVENG-41-243-50-111 from McWilliams Dredging Co., 860 St. Charles St. New Orleans, La., $339,138. CD 12/27.

† Texas—U. S. Eng., 606 Santa Fe Bldg., Galveston, Jan. 6, dredging Houston Ship Channel from mouth of Greens Creek channel to Peggy Lake in Harris Co. CIVENG-41-243-50-106 from Atlantic, Gulf & Pacific Co., 15 Park Row, New York, N. Y. $679,503. CD 12/27.

† Texas—U. S. Eng., 606 Santa Fe Bldg., Galveston, Jan. 9, dredging Clear Creek and Clear Lake channel Galveseton Bay and west end of Clear Lake in Harris, Galveston and Chambers Counties. CIVENG-41-243-50-122 from Gulf Coast Dredging Co., P. O. Box 1112, Texas City, $39,092.

CONTRACTS AWARDED

N. S., Pictou Island—Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., dredging, to Diamond Constr. Co., Ltd., 60 Carleton St., Fredericton, N.B., Approx. $125,000. R. Blais, c/o owner, engr.

AIRPORTS AND AIRBASES

BIDS ASKED

N. J., Newark—CONTROL TOWER—B.A. 1/23—At Office of Chief Engr., The Port of New York Authority, 111 8 Ave., New York, 11, N. Y., alterations and addns. to control tower and equipment bldg., Contr. NA-15. Plans deposit $10. CD 6/6.

† O, Dayton—SCAVENGING BLDG.—B.A. 2/7—U. S. Eng., 830 W. Broadway, Louisville 3, Ky., scavenging bldg. at Wright-Patterson Air Force Base, Serial No. Eng-15-029-50-21. Plans deposit $15. CD 10/26/48.

Pa., Phila.—AIRPORT—B.A. 2/28—City, City Hall Annex, Zone 7, Schedule A, 3 story terminal bldg., approx. 60x1,110 ft., 2 wings each approx. 25x525 ft., boiler house and appurtenant work, Philadelphia International Airport., adv. ENR 1/12. CD 2/19/46.

R. I., Smithfield—AIRPORT—B.A. 2/6—Div. Purchases at office Franklyn A. Adams, state purch. agt., State House, State St., Providence, construct airport, paved runway, apron and taxiway, drainage, lighting, administration, hangar and utility bldgs. North Central State Airport, Proj. No. 9120-42. Plans deposit $50. Knappen, Tippetts & Abbett Eng. Co., 62 W. 47 St., New York, N. Y., engr. CD 8/25.

CONTRACTS AWARDED

Ont., Trenton—RECEIVER BLDG.—Canadian Commercial Corp., 70 Lyon St., Ottawa, receiver bldg. at Air Station for R.C.A.F. to A. F. Byers Constr. Co., Ltd., 5675 Western Ave., Montreal, Que., Approx. $239,000.

PUBLIC BUILDINGS

BIDS ASKED

† Mass., Fitchburg—POST OFFICE—B.A. 1/24—General Service Agency, Dist. Engr., Boston, post office repairs and improvements.

N. Y., Greenville—SCHOOL—B. A. 1/24—Bd. Educ., Greenville, school addn, $334,000. Plans deposit $20. W. Parker Dewey, 109 State St., Albany, archt.

† Pa., Phila—HOSPITAL BLDGS.—B. A. 1/24—Pub. Wks. Office, Phila. Naval Base, Phila., alterations to Hospital Bldgs. 53, 54 and 55. Spec. 23229. $37,500..

La., Monroe—POWER PLANT—B. A. 1/25—City, Monroe, power plant extens., Ford, Bacon & Davis, Inc., 39 Broadway, N. Y., engr. CD 10/11.

N. C., Elizabeth City—SCHOOL—B. A. 1/26—Pasquotank County Bd. Educ., J. H. Moore, supt., Agricultural Bldg., elementary school. Plans deposit $25 general contract. $15, plumbing heating and electrical. John J. Rowland, Kinston, archt.

Ia., Denison—PLANT IMPRVS.—B. A. 1/30—City, Bd. Trustees Municipal Electrical Light and Power Plant, Municipal Electric Light and Power Plant imprvs. and extens., incl. Item I-underground ductbanks and manhole 8; Item II-switchgear and auto-transformer setting; Item III—high voltage power wiring; Item IV—low voltage power wiring; Item V—cable wire, raceways and conduit; Item VI, lighting; A—piping and appurtenances; B-insulation of piping and equipment; C—painting of piping and equipment. Plans deposit $20. CD 12/9.

Que., Maniwaki—SCHOOL—B.A. 1/30—Mrs. P. Joanisse, secy. Catholic School Comm., Maniwaki, 2 story, 58x28 ft. 20 classroom school and teachers residence. Approx. $400,000. Plans deposit $25. Bids 10/5 not accepted. A. Martineau, 200 Bay St., Ottawa, Ont., archt. CD 9/28.

Ark., Rison—HOSPITAL—B. A. 1/31—Cleveland Co., Rison, county hospital, $275,000 with equip. Plans deposit $50. Bruce R. Anderson, Wallace Bldg., Little Rock, archt.

Calif., Redding—HIGH SCHOOL, etc.—B.A. 1/31—Shasta Union High School and Junior College District, Redding, Shasta Union High School and Junior College, $1,180,500. Plans deposit $25. Charles F. Dean, 1521 I St., Sacramento, archt. CD 11/17/48.

Ga., Atlanta—SCHOOL ALTERATIONS, etc.—B. A. 1/31—City Bd. Educ., City Hall, W. H. Crogman Elementary School alterations and addns. Plan deposit $25. Tucker & Howell, Rhodes-Havert Bldg., Atlanta, archts.

Ga., Atlanta—SCHOOL—B. A. 1/31—City Bd. Educ., City Hall, Williams Street School, $460,000. Arthur Neal Robinson, Sr., and Jr., Henry Grady Bldg., archts. Extended date. CD 11/7.

Ill., Macomb—GYMNASIUM—B. A. 1/31—Illinois State Div. Architects & Engineers, Armory Bldg., Springfield.

Continued on page 100

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gymnasium addn. at Western Illinois State College, $300,000. CD 3/8/48.

N. Y., Long Island City—ROAD, YARD IMPRVS.—B. A. 1/31—New York City Housing Auth., 63 Park Row, New York, Zone 7, construct street and yard imprvs. for Ravenswood Houses (NYC-20) comprising Sect 1, in area bounded by 21 St., 34 Ave., 24 St. and 3d Ave. Plans deposit $25.

▲ **Mont., Galen**—HOSPITAL—B.A. February—State Bd. Examiners, Helena, state tuberculosis sanitarium imprvs., incl. 100 bed hospital wing for Indians, 72 bed main hospital addn., housing for 200 employees of institutions, **$3,136,000.** J. Van Teylingen, Medical Arts Bldg., Great Falls, and J. G. Link & Co., 111 N. Montana St., Butte, archts. CD 8/24.

▲ **O., Cuyahoga Falls**—HOSPITAL—B.A. About 2/1—Dpt. P. Wks., S. O. Lindell, dir., Columbus, center sect. with 2 wings, 2½ story 148 ft. long State Mental Receiving Hospital facing Tallmadge Ave. in 2 units with tunnel connecting boiler house and laundry with hospital. $1,151,000. Trefon Sagadencky, 1423 Sackett Ave., archt. CD 7/28.

▲ **Mass., Chelsea**—HOUSING—B.A. 2/1—City of Chelsea Housing Auth., M. George Tigar, chn., 130 unit, 2 and 3 story, bsmnt. housing, State aided Proj. 200-2, Revere Beach Parkway, $1,400,000, M. A. Stubbins, Jr., 103 Pleasant St., Lexington, Mass., archt. CD 3/18.

Mass., Chicopee—SCHOOL—B. A. 2/1—City, School Dpt., Chicopee, 2 story bsmnt., school addn., Fairview Memorial School, $350,000. Plans deposit $50, Henry J. Tessier, 220 Dwight St., Springfield, archt. CD 2/21/47.

W. Va., Buckhannon—ARMORY—B.A. 2/1—State Armory Bldg., Charleston, 1 story T shaped, 93x180 ft., and 31x127 ft. rein.-con. armory. $250,000. Edw. J. Wood & Son, 113 S. 3 St., Clarksburg, archts. CD 11/17.

W. Va., Weston—HOSPITAL—B. A. 2/1—State Bd. Control, Charleston, criminal insane ward, Weston State Hospital $337,000. G. J. Wood & Son, 117 S. 3 St., Clarksburg, archts.

† **Mass., Medford**—STORAGE—B.A. On or about 2/2—U. S. Eng., Bldg. 21, Naval Drydocks, South Boston, 65x182 ft. motor vehicle storage bldg., for Mystic Valley Parkway adjacent to Lawrence Light Guard Armory, for Massachusetts National Guard. Bid MNG 29-093-50-1. CD 11/30.

Ala., Ozark—HOSPITAL—B.A. 2/2—Dale Co., hospital, $600,000. Plans deposit $50. H. L. Holman, Jr., Ozark, archt. CD 11/29.

Conn., Meriden—SCHOOL—B. A. 2/2—City, J. D. Shaw, chn. Bldg. Comn., 405 Broad St., brick, steel school, Parker Ave. $375,000. Keith Sellers Heine, 71 Oxford St., Hartford, archt. CD 10/17.

† **Mass., Medford**—STORAGE—B.A. 2/2—U. S. Eng., Bldg. 21, Naval Drydocks, South Boston 65x182 ft. motor vehicle storage bldg., for Mystic Valley Parkway adjacent to Lawrence Light Guard Armory, for Massachusetts National Guard, Serial No. MNG 19-093-50-1. CD 1/3.

† **Montana**—RESIDENCES, etc.—B.A. 2/2—Bureau Reclamation, Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., 19 residences, office, bunk house, laboratory, fire station, garage, etc., Spec. Re-37 (Region 6). L. N. McClellan, c/o owner, ch. engr. CD 5/25/44.

Tenn., Murfreesboro—CAFETERIA and STUDENT UNION—B.A. 2/2—State of Tennessee, Nashville, combination cafeteria and student union bldg. at Middle Tennessee State College. Approx. $250,000. Plans deposit $200. Hart Freeland & Roberts, 3rd Natl. Bank Bldg., Nashville, archts.

Tex., Houston—SCHOOL—B.A. 2/2—Houston Independent School Dist., 1600 Washington St., converting Hughes Structural Plant into public school. $325,000. Wyatt C. Hedrick, 5201 Fannin St., engr. and archt. CD 1/31/46.

▲ **Va., Staunton**—RECEPTION—B.A. 2/2—At office Dr. Joseph E. Barrett, contr. State Hospital Bd., 9 N. 12 St., Richmond, reception bldg. and 2 recovery bldgs. at Western State Hospital. $1,558,000. Marcellus Wright & Son, 1103 E. Main St., Richmond, archts. CD 12/6/44.

▲ **Calif., Richmond**—SCHOOL—B.A. 2/3—Richmond School Dist., 1108 Bissell Ave., 2 story, rein.-con., 46 classroom Wm. T. Helms Junior High School, San Pablo. $1,500,000. Plans deposit $40. Dragon, Schmidts & Hardman, 1320 University Ave., Berkeley, archts. CD 2/19/48.

N. Y., Northport—SCHOOLS—B. A. 2/3—Bd. Educ., Northport School Dist. No. 4, Northport, grade school addn., East Northport, $250,000. Plans deposit $40; grade school addn. on Ocean Ave., Northport, $280,000. James Van Alst, Main Rd., Centerport, archt.

Tex., Huntsville—HIGH SCHOOL—B. A. 2/3—Huntsville Independent School Dist., Huntsville, high school, $400,000. Plans deposit $25. Page, Southerland & Page, 602 West Ave., Austin, archts. CD 9/16.

Calif., Modesto—SCHOOL—B.A. 2/3—Modesto City School Dist., Washington School Bldg., general work, plumbing, heating and electrical work 23 classroom, frame stucco Mark Twain School, concrete fdns. $600,000. Plans deposit $50. Fred L. Swartz & Wm. G. Ryberg, Rowell Bldg., Fresno, archts. CD 11/1/48.

N. D., Minot—PHYSICAL EDUCATION—B.A. 2/6—State Bd. Higher Educ., Bismarck, physical educ. bldg. and 2 addns. to outer bldgs. at State Teachers College. $400,000. S. M. Houkom, 716 S. 7 St., Fargo, archt. CD 8/30, under LB.

▲ **Mass., Boston**—HOUSING—B. A. about 2/7—City, Boston Housing Auth., City Hall, 3 and 6 story, 648 unit, garden type apartments, Commonwealth Ave., and Washington St., Brighton, $7,200,000, Saul E. Moffie, 1318 Beacon St., Brookline, archt. CD 8/19/49.

Tex., Kingsville—ADMINISTRATION—B. A. 2/7—Texas College of Arts & Industries, Kingsville, combination administration-library, $825,000. Plans deposit $50. Phelps & De Wees & Simmons, 1501 Majestic Bldg., San Antonio, archts. Eggers & Higgins, 542 5 Ave., New York, N. Y., consult. archts. CD 11/30.

† **Wyoming**—COMPRESSOR UNITS, etc.—B. A. 2/7—Bureau Reclamation Dpt. Interior, Bldg. 1-A, Denver Federal Center, Denver, Colo., furnishing and delivering f.o.b. cars at shipping point or f.o.b. cars at Bonneyville, Wyo., compressor units, air receiver for Boysen Power Plant, Boysen Div., Boysen Unit, Missouri River Basin Proj., Spec. 2887. L. N. McClellan, ch. engr. CD 7/30/45.

Calif., Antioch—SCHOOL—B. A. 2/8—Antioch Live Oak Unified School Dist., Antioch, 13 classroom, steel, concrete block school. $324,220. Plans deposit $25. Kump & Falk, 9 Main St., San Francisco, archts. CD 10/26/48.

Ind., Clermont—SCHOOL—B.A. 2/8—State P. Wks. & Supply Div., W. R. Mybeck, dir., 404 State House Indianapolis, 2 story, bsmnt., 64x173 ft., brick, stone, rein.-con., structural steel, Indian Girl's School (Correctional) **$490,000.** E. I. Brown, 604 Insurance Bldg., Indianapolis, archt. G. M. Williams, Archts. & Builders Bldg., Indianapolis, mech. engr. CD 11/22/48.

† **Ohio**—PUMP STATIONS, etc.—B. A. 2/8—U. S. Eng., Madison Ave and 8 St. West, Huntington 18, W. Va., construct pump stations and appurtenant work levee protect on works, Waldo, Delaware Reservoir Proj. Serial No. CIVENG-46-022-50-66. CD 12/29.

La., Houma—SCHOOL—B.A. 2/10—State Bd. Educ., State Capitol, Baton Rouge, South Louisiana Trade School. Plans deposit $35. CD 2/11.

Tenn., Memphis—PHYSICAL EDUCATION—B.A. 2/10—State Purchasing Dpt., State Office Bldg., Nashville, physical educ. bldg. at Memphis State College. CD 10/31, under LB.

Va., Charlottesville—HIGH SCHOOL—B.A. 2/10—At office School Supt., Charlottesville, Joint Negro High School for Charlottesville and Albemarle Co. $750,000. Pendleton S. Clark, Krise Bldg., Lynchburg, and Baker, Heywood & Llorens, 611 E. Main St., archts.

†**Washington**—HOUSING, etc.—B.A. 2/10—U. S. Eng., 4735 E. Marginal Way, Seattle, Zone 4, housing, administration and maintenance facilities for Chief Joseph Dam, incl. 40 frame houses, admin. bldg., vehicle maintenance shop, streets, sidewalks, water distr. lines, sewers, etc., Bridgeport, CIVENG-45-108-50-47. CD 9/12/44.

Fla., Tallahassee—POWER PLANT—B. A. 2/13—City, power plant. Plans deposit $65. Reynolds, Smith & Hills, 227 Park St., Jacksonville, engrs. CD 3/31/48.

† **Arizona-Nevada**—SUBSTATION—B. A. 2/14—Bureau Reclamation, Dpt. Interior Avisla Bldg., Phoenix, Ariz., constr. Mesa substation, Davis Dam Proj., 1 mi. east of Mesa, at site of proposed Mesa substation, Spec. 2889. L. N. McClellan, Bldg. 1-A, Denver Federal Center, Denver, Colo., ch. engr.

Calif., Santa Cruz—HIGH SCHOOL—B. A. 2/14—Santa Cruz Bd. Educ., 65 Mission St., 2 story, Branciforte Junior High School with 1 story wings with shops and gymnasiums in separate bldgs., athletic field, $700,000. Plans deposit $50. Robert Stanton, Box 2177, Carmel, archt. CD 6/21.

Fla., Quincy—HOSPITAL—B. A. 2/14—Gadsden Co. Memorial Hospital; c/o J. B. Higdon, Quincy, 3 story hospital, $850,000. Robert & Co., Assoc., Inc., Bona Allen Bldg., Atlanta, Ga., archts. CD 7/28, under LB.

Kan., Osawatomie—AUDITORIUM—B.A. 2/14—City, auditorium and city hall, $300,000. Burns & McDonnell, 95 and Troost Sts., Kansas City, Mo., engrs. CD 4/17/46.

†**Ky., Lexington**—BOILER HOUSE, etc.—B.A. 2/14—Veterans Adm'n., Wash. 25, D. C., addnl. bldgs., utilities, incl. approx. 175,000 cu. ft. Boiler House 39; approx. 9,000 cu. ft. Incinerator Bldg. 41; approx. 2,800 cu. ft. Underground Soft Water Reservoir 42; approx. 1,500 cu. ft. Underground Wet Salt Storage basins 43; approx. 500,000 gal. Concrete Reservoir 44; approx. 8,000 cu. ft. Pump House 45, etc.

La., Crowley—COURTHOUSE—B.A. 2/14—Acadia Parish Police Jury, Crowley, 3 story, 45,800 sq. ft. courthouse. Plans deposit $50. Extended date. CD 4/26.

† **Alaska**—MILITARY INSTALLATION—B.A. 2/14—U. S. Eng. (APO 942; c/o PM, Seattle, Wash.), Anchorage, bachelor officers' quarters, airmen's barracks, central heat and power plant, operations bldg., warehouse and cold storage, vehicle warm storage, mess hall, recreation bldg., dispensary and administration bldg., POL station storage, outside utilities and roads on Fire Island, S 95-507-50-6. Plans deposit $100. Extended date. CD 12/21.

LOW BIDDERS

▲ **Calif., Los Angeles**—CHEMISTRY-GEOLOGY BLDG.—Bd. Regents, University of California, 405 S. Hilgard Ave., Jan. 4, 3 story, 150,000 sq. ft., rein-con. brick chemistry-geology bldg., from Haddock-Engineers Ltd., 1616 Greenwood St., Montbello, **$2,525,000,** est. $3,000,000. CD 12/13.

▲† **Conn., West Haven**—HOSPITAL—U. S. Eng., Bldg. 21, U. S. Naval Drydock, South Boston, Mass., Jan. 11, veterans hospital on 63 acre site between W. Spring St. on South Terrace Ave. on North and exten. along Campbell Ave., Serial No. Eng 10-016-50-5, for veterans adm'n., Vermont Ave. between H and I Sts N. W., Wash., 25, D. C., from Merritt-Chapman & Scott Corp., 17 Battery Pl., New York N. Y., $12,845,000, est. $13,009,000. CD 12/15.

† Ill., Chicago—HOSPITAL ELEVATORS, etc.—Veterans Admin., Munitions Bldg., Wash., D. C., Jan. 10, electric elevators and dumbwaiters, Veterans Administration Hospital, Method A, from Haughton Elevator Co., 2117 K St. N.W., Wash., D. C., $306,500; Method B, from Montgomery Elevator Co., 30 20 St., Moline, Ill., $272,933. CD 10/10, under LB.

Ind., New Castle—SCHOOLS—Bd. School Trustees & New Castle Twps., New Castle, Jan. 4, 1 story, irregular-shaped, brick, stone, rein.-con., structural steel, Wilbur Wright School, 18 and Washington Sts. and 1 story, bsmt., irregular shaped brick, rein.-con., structural steel, Sunnyside Elementary School, from R. E. Schenck Co., 1540 N. Meridian St., Indianapolis. $415,217. CD 12/21.

▲ Md., Baltimore — SCHOOLS — City, Bureau Bldg. Constr., 410 Municipal Bldg., Zone 2, Jan. 4, 3 story, T-shaped, brick, cinder block, concrete West Baltimore Negro Elementary School, from Costanza Constr. Co., 225 E. Redwood St., $1,023,450, est. $1,460,000. CD 11/30.

Md., Towson—SCHOOL—Baltimore Co. Bd. Educ., Jan. 5, 1 story, bsmt., 60x258 ft. brick, steel, concrete, Mars Estates Elementary School, Back River Neck Rd. and Eastern Ave., near Essex, from John K. Ruff, Inc., 100 W. 22 St., Baltimore, Zone 8, $435,731, est. $775,000. CD 12/19.

† Md., White Oak—RESEARCH TANK—P. Wks. Officer, Naval Gun Factory, Washington, D. C., rejected bids 1/6, 40x60 ft., welded steel plate research tank, (NOY 19456) incl. motor operated platform hoists, Naval Ordnance Laboratory, LB. $114,000. Project cancelled. CD 1/4.

▲ Pa., Phila.—YOUTH STUDY CENTER—Phila. County Comrs., City Hall, youth study center from McCloskey & Co., 1620 W. Thompson St., $1,533,000. Fred N. Severud, 415 Lexington Ave., New York, N. Y., engr. CD 12/22, under LB.

Tex., Lamarque—SCHOOL—Lamarque Independent School Dist., Lamarque, Jan. 5, school, from Texas Gulf Constr. Co., 2008 S. Wayside St., Houston. $306,913. Est. $350,000. CD 12/20.

Tex., San Marcos—LIBRARY, etc.—Southwest Texas State Teachers College, San Marcos, Jan. 9, general contract 3 story library addn., dormitory and fine arts bldgs., from Yarbrough Constr. Co., P. O. Box 851, Austin. $711,000. CD 12/13.

CONTRACTS AWARDED

Kan., Lawrence—CARRILLON TOWER—University of Kansas Memorial Assn., World War II, Lawrence, memorial carillon tower, to Constant Constr. Co., Lawrence, $325,000, est. $325,000. Bids 9/27. CD 9/27.

▲ Mass., Boston—HEADQUARTERS—City, Fire Dpt., 60 Bristol St.; fire Dpt. headquarters and maintenance garage, Southampton St. and Massachusetts Ave., to M. S. Kelliher Co., 294 Washington St., $1,684,942, Awarded 12/30, John M. Gray Co., 175 High St., archt., Cleverdon-Varney-Pike, 120 Tremont St., engrs. CD 10/1/48.

▲ Mass., Framingham—HOUSING—Town of Framingham Housing Auth., Musterfield Veteran's Housing Proj., Concord St., to B. Perini & Sons, Inc., 73 Montwait Ave., $1,158,841. Bids 12/29, awarded 1/4. CD 12/6.

▲ Mass., Holyoke—HOUSING—City of Holyoke Housing Auth., housing, Proj. 200-1, to Daniel O'Connell's Sons, Inc., 480 Hampden St., $1,691,000. Bids 12/14, awarded 12/21, Gordon E. MacNeil, Main St., Lakeville, engr. CD 12/20, under LB.

▲ Mass., Revere—HOUSING—City of Revere Housing Auth., Pleasant St., Veterans Housing Proj., Coolidge St. and Constitution Ave., to Palmer Zoppo Co., 842 Providence Hy., Norwood, $1,233,000. Bids 12/21, awarded 12/28. CD 11/28.

▲† Oklahoma—POWERHOUSE, SWITCHYARD FACILITIES—U. S. Eng., Box 61, Tulsa, powerhouse, switchyard facilities, railway spur track, ventilating, air-conditioning, access roads, drainage, equip. installation, etc., Fort Gibson Dam Proj., Inv. No. ENG-34-066-50-50, to W. R. Grimshaw Co., 1328 Hunt Bldg., Tulsa, $2,737,986. Est. $1,300,000. Bids 12/15. CD 12/28, under LB.

B. C., Vancouver—ADMINISTRATION BUILDING—Vancouver School Bd., 590 Hamilton St., 5 story, 125x180 ft., hard pressed brick, tile, rein.-con. administration bldg., to Smith Bros. & Wilson Ltd., 1267 Richards St., Vancouver. Approx. $570,000. Bids 12/21. CD 12/30, under LB.

COMMERCIAL BUILDINGS

BIDS ASKED

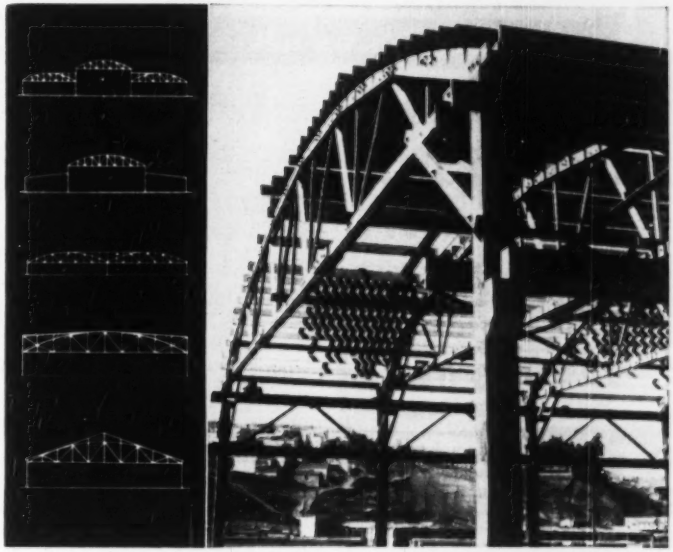
La., Houma—SCHOOL—B.A. 1/26—Roman Catholic Congregation of St. Francis de Sales, Parish, c/o Bendernagel & Cazale, archt., 8 Marlborough Gate, New Orleans, 3 story parochial school.

Tex., Odessa—CHURCH—B.A. 1/26 — First Baptist Church, Odessa, church. $250,000. Wilson & Patterson, Majestic Bldg., Fort Worth, archts. CD 1/19.

Tex., Fort Worth—HOUSING—B.A. 1/27—Planning Bd., Fort Worth Quartermaster Depot, Fort Worth, finance, manage and construct, 30 unit brick, stucco or wood frame and either brick or stone veneer military housing. Approx. $350,000. Extended date. CD 11/23.

▲ Colo., Denver—DEPARTMENT STORE—B.A. 2/1—Louis W. Mack, Mack Bldg., Denver, general contract 6 story department store, $1,000,000. Extended date. Raymond Ervin Patterson Bldg., Denver, archt. and engr. J. C. Penney Co., 16 and Champa Sts., lessee. CD 12/18.

N. C., Wilmington—OFFICE—B.A. 2/8—Seacoast Realty & Development Co., c/o Charles C. Hartmann, archt., Greensboro, office. Approx. $250,000



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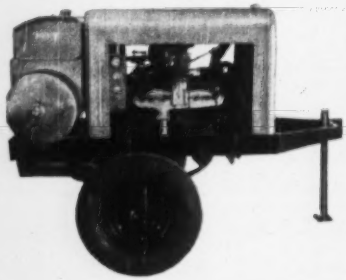

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▲ Ore., Eugene—HOSPITAL—B. A. 2/15—Sacred Heart Hospital, Eugene, 6 story hospital addn. $1,500,000. Plans deposit $50. J. W. Maloney, Central Bldg., Seattle 4, Wash., archt. CD 5/16/46.

▲ O., Toledo—SHOPPING CENTER—B.A. in Spring—Urban Development, Inc., c/o Ray Murnen and Dean Bailey, Edison Bldg., 1 story center with two 2 story wings for 15 or more storerooms, shopping center on 17½ acre tract bordering Monroe St. opposite Hampton Park, incl. off-street parking. $2,500,000. Ketchum, Gina & Sharp, 227 E. 44 St., New York, N. Y., archts.

N. Y., Ogdensburg—CATHEDRAL—Bids Asked—Roman Catholic Diocese, Ogdensburg, 1 story bsmnt., brick, granite, limestone Cathedral. Approx. $250,000. Maginnis & Walsh, 126 Newbury St., Boston, Mass., archts.

R. I., Warwick—CHURCH, etc.—Bids Asked—St. Marks Episcopal Parish, A. R. Parshely, Arch Deacon, 101 Benefit St., Providence, bsmnt. only for 1 story, 30x140 ft., 40x80 ft., brick, stone, cinder block church-parish house, etc. W. Snore Rd. (1 story 40x80 ft. addnl. for classrooms and auditorium, future), $250,000. Irven F. Goodman, 934 Industrial Trust Bldg., Providence, archt. CD 2/21.

Tex., Baytown — MERCANTILE—Bids Asked—Sears, Roebuck & Co., 4207 Main St. Houston, mercantile. $350,000. CD 11/1.

Tex., Dallas—HOTEL—Bids Asked—Ervington Hotel Co., 1200 S. Ervay St., 124 room hotel addn. $850,000. Raymond F. Smith, 2009½ Jackson St. archt. CD 12/19.

Tex., Dallas—HOTEL—Bids Asked—Melrose Hotel, 3015 Oaklawn St., reconditioning, remodeling, existing 8 story hotel, air-conditioning. $250,000. Landauer & Guerrero, 4801 Lemmon St., engrs. CD 12/13.

SOON LETS CONTRACT

Fla., Jacksonville—ACTIVITIES CENTER, etc. Marsh & Saxelby, archts., Hildebrandt Bldg., Zone 1, soon lets contract activities center and educational bldg. incl. auditorium, lounge, athletic and recreational facilities and library 3 and Perry Sts., for Jewish Center Associates, 3 and Silver Sts., Zone 6. Approx. $250,000.

Pa., Jersey Shore—HOSPITAL—Jersey Shore Hospital, 135 Howard St., soon lets contract, hospital. $250,000. Chatfield & Schlicker, 324 W. Chelton Ave., Phila., archts.

Pa., Phila. — SUPERMARKET — Penn Fruit Co., 1919 Chestnut St., soon lets contract, supermarket, 3 stores and parking lot. Approx. $250,000. Howell Lewis Shay, Packard Bldg., archt. CD 4/14.

LOW BIDDERS

Md., Hagerstown—HOME—Homewood Church Home, Hagerstown, aged home, from O. H. Hostetter, Hanover, Pa., $369,000, Jas. R. Edmunds, Jr., 130 W. Hamilton St., Baltimore, archt.

CONTRACTS AWARDED

▲ Calif., Colma and South San Francisco—RESIDENTIAL DEVELOPMENT—McKeon Constr. Co., 550 Taraval St., San Francisco, 1400 unit subdivision on 200 acre site Ranch Buri Buri incl. homes, stores, playgrounds, etc., Owner builds. Approx. $1,000,000.

Calif., Lafayette — RESIDENCES—Meadow Development Co. c/o Wm. Blackfield, Box 305, 98 four room residences on Lots 23, 25, 122 inch and Lot 139 in Fruitridge Manor, Owner builds. $392,000.

▲ Del., Seaford — RESIDENTIAL DEVELOPMENT—Good Hope Manor, 416 Arch St., residential development, separate contracts. $1,500,000.

▲ Del., Wilmington—RESIDENTIAL DEVELOPMENT—Gordy & Son, Inc., Du Pont Highway, residential development 225, Boxwood Rd. Section, $1,500,000; residential development, Westover Hills, $250,000, separate contracts.

D. C., Wash—SUNDAY SCHOOL ADDN.—Metropolitan Memorial Methodist Church, 3311 Nebraska Ave. N. W., one 2 story, masonry Sunday School addn., 3311 Nebraska Ave. N. W., to William P. Lipscomb Co., Inc., Woodward Bldg., $325,000. A. Hensel Fink, 1701 Arch St., Phila., Pa., archt. Awarded 1/5.

Ky., Louisville—COLLEGE—Owner, c/o Bellarmine College, 1212 Oleanda Ave., Catholic Men's College, to A1. J. Schneider Co., 7 St. Rd. Approx. $450,000. Awarded 1/3. CD 11/23.

Ky., Louisville—APARTMENT—Martin S. Adams & Son, Commonwealth Bldg., 5 and Main St., 132 apartments, 5 and Ormsby Sts., to Martin S. Adams & Son, Commonwealth Bldg., 5 and Main Sts., $800,000, Peyton Davis, 508 W. Jefferson St. archt.

Mass., Haverhill—TEMPLE—Temple Emanuel, 514 Main St., 3 story, 70x75 ft., brick, stone, steel, temple alterations, addn., Main St. and 10 Ave., to J. F. Rand & Son, 57 Sudbury St., Boston, approx. $250,000. CD 12/27.

Mass., Newton—APARTMENTS—Owner, c/o Arthur G. Manaselian, archt., 30 Huntington Ave., Boston, 2 story bsmnt., 38 unit brick apartment. Owner builds. $300,000. CD 6/12/49.

N. J., Paulsboro—RESIDENTIAL DEVELOPMENT—Paulsboro Building Corp., 814 N. Broad St., Woodbury, residential development Devault St., etc., separate contracts, $250,000. Dante D'Anastasio, 1815 Federal St., Camden, archt.

N. J., Trenton—SCHOOL—Holy Angels Parish, Broad St. Park, general contract, 2 story, brick Holy Angels elementary school to Smith Constr. Co., 46 Prospect St., Trenton, and plumbing and heating, to Wm. F. Hindley Co., N. Olden St.; electrical work to Peifer Electric Co., 522 S. Warren St., Approx. $275,000. Bids 1/5. CD 1/4.

N. J., Woodlyne — RESIDENTIAL DEVELOPMENT—Benjamin Hajduk, 1349 Jackson St., Camden, residential development, Powelton Ave., etc., separate contracts, $250,000. Dante J. D'Anastasio 1815 Federal St., Camden, archt.

N. Y., Flushing—HOUSES—Ashby Realty Corp., c/o D. J. Levinson, archt., 92-32 Union Hall St., Jamaica, 30 one family houses on 24 Ave., 157 and 154 Sts. Owner builds. $250,000.

N. C., Charlotte—SCHOOL, HALL—Covenant Presbyterian Church, Thomas M. Barnhardt, Jr., Gen. Chn., 120 Oakland Ave., church school and fellowship hall to Southeastern Constr. Co., 301 W. 2 St., Charlotte, Approx. $603,000. Bids 12/29. CD 12/8.

N. C., Durham—HOUSING—College View Apartments, Durham, 45 homes Negro Housing to Moore-Johnson Constr. Co. Inc., Capital Club Bldg., Raleigh, $350,000.

O., Cleveland—CHURCH, etc.—St. Leo Catholic Parish, 4865 Broadview Rd., church and elementary school to Gaspard Constr. Co., 2093 Concord Rd., Lakewood, Zone 7. Approx. $350,000. Awarded 12/26. CD 12/16, under LB.

O., Cleveland—HOMES—L. M. Gunderson, 13124 Shaker Square, Shaker Heights, 20 two story, bsmnt., frame, stone homes, separate contracts. $500,000. CD 3/6/44.

O., Cleveland—HOMES—Hanson & Beatty Constr. Co., 4040 Mayfield Rd., South Euclid, 75 two story, bsmnt., frame homes, separat contracts. $750,000.

O., Cleveland—HOMES—Jordon Home Constr. Co., 2239 Barrington Rd., University Heights, thirty, 1½ story, bsmnt., frame homes, separate contracts. $285,000.

O., Cleveland—HOMES—Squires Building Co., 2160 Fairhill Rd. seventy-five 1½ story frame homes, separate contracts. $675,000.

O., Dayton — APARTMENT — Southern Terrace, Inc., c/o Mrs. Vadna Lindsey, secy., and Phillip Froikin, pres., 315 Telford Ave., 40 unit apartment, comprising 2 bldgs., one facing Patterson Blvd. and other facing Avalon Ave. in Southern Hills area to Rockford Constr. Co., c/o owner. Approx. $500,000.

▲ O., Parma—HOMES—Michael M. Varady, 2700 Loraln Ave., Cleveland, 100 homes between Westlake and Forest Aves., and W. 54 St. and Ridge Rd., separate contracts. $1,000,000.

Pa., Phila.—RESIDENCES—A. P. Orleans & Co., 100 W. Rockland St., residential development, Comly St. separate contracts. $250,000.

Pa., Springfield—RESIDENCES—Bell & Co., 407 Saxer Ave., residential development, Saxer Ave., separate contracts. $500,000.

Pa., Springfield—RESIDENCES—James J. Maley Inc., 55 Long Lane, Upper Darby, residential development, Leamey Ave. etc., separate contracts. Approx. $250,000. David Slott, 7060 Garrett Rd., Upper Darby, archt.

Tenn., Columbia—HOMES—A. M. Scribner, Columbia, 100 homes. Owner builds. Approx. $450,000.

Tenn., Memphis—HOMES—Atlas Contractors, Inc., Shrine Bldg., 160 homes in Barksdale Heights subdivision. Owner builds. Approx. $750,000.

Tex., Dallas—APARTMENT—American Home Realty Co., Angus Wynne, Jr., 2311 Salerno St., 25 two story apartments. Own forces. Approx. $875,000.

▲ Tex., Dallas — DWELLINGS—Bailey Johnson Co., Lake June Rd., 2nd dwellings in 2nd half of 3rd Sect. of Pleasant Grove zone. Own forces. $1,176,000. CD 11/15.

Tex., Dallas—DWELLINGS—Lewis & Lambeth, 3728 Mt. Rainier St., 100 addnl. dwellings, Community Housing Proj. Own forces. $425,000. CD 3/3/48.

Tex., Houston — DWELLINGS — Raleigh A. Smith & Sons, 6409 Paine St., 32 dwellings. Owner builds. $250,000. CD 12/29.

Tex., Jacinto City—DWELLINGS—Edward Williams, 2318 Sul Ross St., Houston, 75 dwellings. Owner builds. $450,000. CD 1/6.

Ont., Toronto — APARTMENT BUILDING—Leamill Constr. Co., Ltd., 857 Millwood Rd., 34 suite structural steel brick apartment bldg., own forces, Approx. $275,000. Barnett & Rieder, 644 Bayview Ave., Toronto, archts.

Que., Montreal—HOUSING—E. Laniel, 1815 W. Notre Dame St., housing, Upper Lachine Rd., to P.P. Larriviere, 6750 Delormier St., Montreal. Approx. $680,000. G. Jarry, 7074 Chambord St., archt.

Que., St. Jovite—CHURCH—Parish of St. Jovite, Rev. R. Mercure, cure, 80x162 ft., steel, stone church exten. day labor. Approx. $300,000. J. E. Perron, 5362 Louis Colin Ave., Montreal, archt.

INDUSTRIAL BUILDINGS

BIDS ASKED

Ga., Augusta—BUS TERMINAL—B.A. About 2/1—Atlantic Greyhound Corp., c/o George D. Brown, archt., P. O. Box 2553, Charleston, W. Va., bus terminal, $100,000. CD 11/1/46.

Va., Danville—BUS TERMINAL—B.A. About 2/1—Atlantic Greyhound Corp., Danville, bus terminal. $100,000. George D. Brown, P. O. Box 2153, Charleston, W. Va., archt.

Mass., Lowell — WAREHOUSE — B.A. 3/21 — Wamesit Supply Co., 631 Dutton St., 2 story, 65x190 ft., brick, steel, concrete, warehouse, Dution St., $145,000. CD 12/19.

Conn., Portland—Bids Asked—GARAGE, etc.—Jackson Brothers, Portland, 1 story, 70x160 ft., brick steel, concrete garage and showroom, Main and Marlborough Sts. $70,000. Leo F. Caproni & Assoc., 1221 Chapel St., New Haven, archts.

Ill., Chicago—MACHINE SHOP—Bids Asked — South Works of Carnegie Illinois Steel Co., 83 at Lake Sts., Zone 17, 12,000 sq. ft., steel, brick machine shop, $68,000.

Ill., Cicero—FACTORY—Bids Asked—Ceco Steel Co., 5601 W. 22 St., 1 story 70,000 sq. ft., steel factory, $600,000.

▲ Tex., Freeport—AMMONIA PLANT—Bids Asked—Dow Chemical Co., Freeport, ammonia plant, $4,000,000. Dr. A. P. Beutel, c/o owners, engr. CD 2/3/47.

SOON LETS CONTRACT

Fla., Minneola—PACKING HOUSE—Seaboard Airline R. R., W. D. Simpson, ch. engr., S.A.L.R.R. Bldg., Norfolk, 19, Va., soon lets contract packing house for John Campbell. GD 1/5.

Pa., Phila.—WAREHOUSE—I. Demchick, archt., 246 S. 15 St., soon lets contract, 1 story 67x180 ft. pipe warehouse for Standard Plumbing Supply Co. Inc., 131 W. Girard Ave. Approx. $68,000.

Vt., Milton—FACTORY, OFFICE—Kienle & Co., 33 Nassau Ave., Brooklyn, N. Y., soon lets contract 1 story 100x300 ft., factory, 100x150 ft. office. $500,000. Freeman, French, Freeman, 138 Church St., Burlington, archts.

LOW BIDDERS

Del., Wilmington—SALES and SERVICE—Porter Motors, Inc., 38 and Market Sts., rejected bids Dec. 20, auto sales and service bldg., Approx. $68,000. CD 12/16.

CONTRACTS AWARDED

▲ Idaho, Lewiston — PLANT — Potlatch Forests, Inc., Lewiston, pulp paper plant, to W. J. Park & Sons, Yakima, Approx. $2,000,000. CD 6/28.

Ill., Chicago—FACTORY—Formfit Co., 5156 W. Roosevelt St., Zone 44, 1 story, 72,000 sq. ft., steel, concrete, brick factory, incl. cafeteria, library, loading docks, to B-W. Constr. Co., Inc., 39 S. LaSalle St., Zone 3, $600,000. Awarded 1/3. CD 9/27.

Ill., Chicago—PLANT—Universal Form Clamp Co., 1238 N. Kostner St., 1 story, steel, brick, concrete addition to Herlihy Mid-Continent Co., 79 W. Monroe St., Zone 3, $76,000. Verne Alden, 120 S. LaSalle St., Zone 3, archt.

Kan., Kansas City—GRAIN ELEVATOR—Farmers Union Jobbing Assn., Bd. Trade Bldg., Kansas City, Mo., 1,157,000 bu. capacity grain elevator, located between Sunshine Rd., and the Missouri River to MacDonald Engr. Co., 188 W. Randolph St., Chicago, Ill., $690,000. CD 7/24/46.

Mass., North Adams—PLANT—Peter Cleansers, 119 Eagle St., 1 story, 80x95 ft., brick, steel, concrete fur storage plant, inc. cleaning facilities, to Gordon & Sutton, 227 Houghton St., Approx. $70,000. Arthur F. Eldridge, 85 Main St., archt.

O., Cleveland—WAREHOUSE—Associated Steel Co., 4545 Hough Ave., 1 story, approx. 75x85 ft., brick, block, steel warehouse, warehouse facilities, two 5 ton overhead cranes to Norge Constr. Co., 1742 E. 23 St., Approx. $75,000. Awarded 12/27. Leonard Braida, 1742 E. 23 St. archt. CD 1/3.

Pa., Phila.—GARAGE, TRUCK TERMINAL—Blue Comet Express, 1633 N. Phillip St., 1 story masonry, steel, garage, truck terminal to William J. Stoud, 1925 Ashely Rd. $75,000. Joel Gahuse, 5606 Lebanon Ave., archt.

Pa., Phila.—WAREHOUSE—J. Edwards & Co., 314 N. 12 St., 2 story 70x140 ft., steel, wood, concrete warehouse adn. to Lauter Constr. Co., 112 S. 16 St., $75,000

Pa., Phila.—SHELTER SHED—Pennsylvania R.R., J. L. Gressitt, ch. engr., Broad St. Station Bldg., 1619 Pennsylvania Blvd., 1 story 151x265 ft. rein.-con. shelter shed, 30 and Market Sts. to McCloskey & Co., 1620 W. Thompson St. $175,000.

Pa., Phila.—CRUSHER BLDG.—Richard C. Remmy Sons Co., Headly St. and Delaware Ave., 1 story 27x68 ft. and 40x95 ft., steel crusher bldg., separate contracts. Approx. $68,000.

Pa., Phila.—BAKERY, GARAGE, etc.—Mrs. Smith's Pie Co., 963 N. 9 St., 100x320 ft. bakery and garage; 1,440 sq. ft. maintenance bldg., rein.-con., brick constr. to Joseph R. Farrell Inc., 4424 Market St. $300,000. Bids 11/23. CD 11/23.

Pa., Telford — HOSIERY MILL — Hughes-Foulkrod Co., 1565 Race St., Phila., 1 story, brick, block hosiery mill adn. Own forces. $68,000.

Tex., Acme—PLANT, etc.—Certain-Teed Products Corp., Acme, board plant enlargement and warehouse. Approx. $275,000 and $190,000 respectively. Own forces. CD 1/6.

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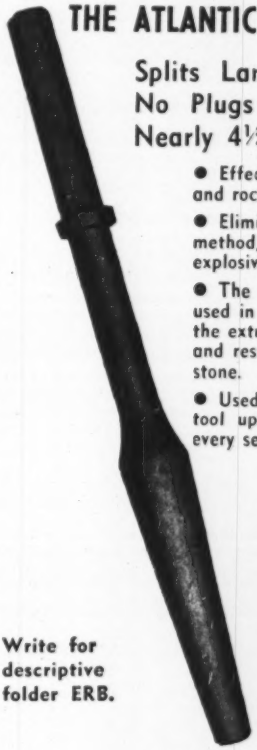

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SEARCHLIGHT SECTION

Tex., Dallas—WAREHOUSE—Damon Wells, 2107 McKinney St., Houston, 100,000 sq. ft. warehouse, to Robert N. Smith & Co., 2301 Telephone Rd., Houston, $116,000. Awarded 1/7. CD 12/16.

Tex., Longview—PLANT—East Texas Electric Steel Co., Longview, commercial sponge iron plant. Own forces. $850,000. CD 11/28.

Alta., Lethbridge—WAREHOUSE—Verjan, Ltd., 10130 105 St., Edmonton, 2 story, 100x100 ft., brick warehouse, Second Ave. and 12 St., to Hurst Constr. Co., 913 Eight Ave. W., Edmonton, Approx. $140,000. CD 9/29.

Ont., Aylmer—PLANT—Carnation Co., Ltd., 60 King St. W., Toronto, 1 story, 60x160 ft., rein.-con., brick plant, own forces, Approx. $300,000.

UNCLASSIFIED

BIDS ASKED

N. Y., Bayville—BATHHOUSE, etc.—B.A. 1/24—Bd. Supvrs., of Oyster Bay, Town Hall, Oyster Bay, bathhouse, comfort station, etc. Philip Goodwin, 32 E. 57 St., New York, Zone 22, archt.

† **W. Va., Wheeling**—FIRE PROTECTION—B.A. 1/25—Pub. Wks. Office Headquarters, Fifth Naval Dist., U. S. Naval Base, Norfolk, 11, Va., fire protection at Naval Reserve Training Center, Spec. 23392. Plans deposit $10.

Fla., Miami—PAVILION—B.A. 1/31—Dade Co., Courthouse, Miami, 67x28x20 pavilion at Homestead Bay Front Park. Plans deposit $15. C. J. Parman, P. O. Box 156, Homestead, archt. CD 11/9/44.

Ind., Kokomo—DRIVE-IN THEATRE—B.A. 2/1—Alliance Theatre Corp., 231 S. LaSalle St., Chicago, Ill., 800 car capacity drive-in theatre, U.S. Rte. 31, south of here on Alto Rd. Approx. $100,000.

† **Washington**—SWITCHYARD—B.A. 2/7—Bureau Reclamation, Dpt. Interior, 202 N. 4 Ave., Yakima, construction of Roza Switchyard, Spec. R1-66. L. N. McClellan, Bldg. 1-A, Denver Federal Center, Denver, Colo., ch. engr.

† **Ala., Mobile**—UTILITY BLDG.—B.A. About 2/14—U. S. Eng., 2301 Grant St., Mobile, constr. utility bldg. adn., Mobile National Cemetery, Serial No. Eng 01-076-50-34.

† **Washington**—TRANSMISSION LINE—B.A. 2/15—Bonneville Power Admin., Box 3537, Portland, Ore., constr. Olympia-Covington 230 kv transmission line Inv. 4917, Thurston, Pierce and King Counties, L. C. Stewart, Box 3537, Portland, 8, Ore., engr. Extended date. CD 12/13.

† **Oregon**—GENERATORS—B.A. 2/23—U. S. Eng., 19 E. Poplar St., Walla Walla, Wash., four 73,684 kva. alternating-current generators for McNary Dam powerhouse, CIVENG-45-164-50-80.

LOW BIDDERS

Calif., Fresno—ELECTROLIER SYSTEM—City, City Hall, Jan. 5, install electrolier system for Fulton St. lighting, from Robinson Electric, 136 N. Van Ness Ave., Fresno. $82,416.

Mass., East Boston—STATION—Metropolitan Transit Auth., Park Sq. Bldg., Jan. 4, airport station at Logan airport, East Boston, from Bossi Constr., Inc., 43 Leon St., Boston. $277,046. CD 4/13/48.

CONTRACTS AWARDED

▲ **Arizona-California**—COMPRESSOR STATIONS—El Paso Natural Gas Co., Bassett Tower, El Paso, Tex., 80,000 hp additional ocmpressor stations, on 102 mi. line between Gila Bend to Colorado River near Needles, Calif. Owner builds. $6,400,000. CD 5/18.

Kan., Norton—MOTOR COURT—Billie H. Brooks, Norton, motor court, Owner builds. $50,000.

Kan., Topeka—EXHIBIT BLDG.—Kansas Free Fair Assoc., c/o contractor, exhibit bldg. on Fairgrounds, to J. A. Lundgren & Son, 213 Jackson St., Topeka. $50,000.

Ky., Louisville—GRAND STAND—Churchill Downs, Inc., 4 St. and Central Ave., grand stand imprvs., Churchill Downs, Race Track, to Sullivan & Cozzart, 822 W. Kentucky St., $80,000. Awarded 12/20. D. X. Murphy & Bros., Louisville Trust Bldg., archts.

▲ **Missouri**—RAILROAD—Chicago, Burlington & Quincy R.R. Co., H. R. Clarke, ch. engr., 547 W. Jackson Blvd., Chicago, 6, Ill., fencing, clearing, grubbing, grading, placing of drain pipe, building of concrete boxes, placing of subdrainage and doing certain bridge work on 42 mi. section between Tina Junction and Missouri City Junction, to List & Clark Constr. Co., Railway Exchange Bldg., Kansas City, Mo. $3,288,288 ***substructure concrete work for Grand River and Tater Hill creek bridges, to Kiewit & Wetherby Constr. Co., 231 W. 47 St., Kansas City, Mo., $182,633*** grading and right of way imprvt. on existing Burlington track between Forker Junction and Tina Junction to be brought up to main-line standards, to John P. Abramson Constr. Co., 720 Savings & Loan Bldg., Des Moines, Ia., $986,753***rails; mi. section between Brookfield and Forker Junction, to Cameron Joyce Co., Keokuk, Ia., $210,110. CD 5/30.

Pa., Phila.—PIER—Franklin Sugar Co., foot of Reed St., Pier No. 57-South to Raymond Concrete Pile Co., 1500 Walnut St., Approx. $500,000.

Tex., Dallas—GAS LINES—Lone Star Gas Co., 1915 Wood St., addnl. burane gas distr. lines, $80,000; extens. natural gas lines, various sections of city, $225,000; installing natural gas service lines—mains to bldgs. $75,000, force account. Grand total $380,000.

Tex., Fort Worth—BASEBALL PARK—Fort Worth Baseball Club, N. E. 7 and Jones Sts., baseball park construct. Own forces. $275,000. CD 5/20.

Proposal Advertisements see pp. 104 to 107 and 119

OFFICIAL PROPOSALS

Bids: January 23, 1950 (511)

Furnishing and Delivering Fire Hydrants

WASHINGTON SUBURBAN SANITARY COMMISSION
CONTRACT NO. 733-W

Sealed proposals for furnishing and delivering forty (40) 4.0', seventy (70) 4.5', seventy (70) 5.0', fifty (50) 5.5', fifty (50) 6.0', ten (10) 6.5', five (5) 7.0', three (3) 7.5' and two (2) 8.0' fire hydrants will be received at the office of the Washington Suburban Sanitary Commission, Hamilton Street, Hyattsville, Maryland until 2:20 P.M. Eastern Standard Time, Monday January 23, 1950 at which time and place they will be publicly opened and read.

Specifications may be obtained from W. R. Douglas, Purchasing Agent of the Commission, Hyattsville, Maryland.

Dwight B. Galt, Chairman
Warren Browning
Leland G. Worthington
Commissioners

Bids: January 31, 1950 (510)

Construction of Structures & Grading, Drainage & Paving

PENNSYLVANIA TURNPIKE COMMISSION
Harrisburg, Pennsylvania

NOTICE TO BIDDERS

Sealed proposals will be received by the Pennsylvania Turnpike Commission, through the Chairman, 11 North Fourth Street, Harrisburg, Pennsylvania, until 10:00 A.M. (Eastern Standard Time), the 31st day of January, 1950, and immediately thereafter at the Auditorium of the Public Utility Commission's Hearing Room No. 1, North Office Building, State Capitol, Harrisburg, Pennsylvania, and immediately publicly opened and read aloud, for the following contract and/or contracts:

For the construction of structures and the grading, drainage and paving of Turnpike Section 29D, part of the Western Pennsylvania Turnpike Extension in North Sewickley Township, Beaver County, Commonwealth of Pennsylvania. This section being situated as follows:

Beginning at a point approximately 650 feet East of the centerline of Beaver River in North Sewickley Township, at Turnpike Station 280+98, in Beaver County, thence in an Easterly direction 21,002 feet to a point approximately 2,077 feet West of Township Road 609, North Sewickley Township, at Turnpike Station 491+00 in Beaver County, a distance of approximately 3.97 miles.

The approximate quantities of the principal items are as follows:

Class I Excavation, 758,500 cubic yards; Class IA Excavation, 44,500 cubic yards; Class II Excavation, 18,700 cubic yards; Reinforced Concrete Pavement, 111,200 square yards; Class A Concrete, 2,580 cubic yards; Class B Concrete, 2,270 cubic yards; Plain Steel Bars, 366,600 pounds; Fabricated Structural Steel, 603,100 pounds.

For the construction of structures and the grading, drainage and paving of Turnpike Section 29E, part of the Western Pennsylvania Turnpike Extension in North Sewickley, Marion, and New Sewickley Townships, Beaver County, Commonwealth of Pennsylvania. This section being situated as follows:

Beginning at a point approximately 2,077 feet West of Township Road 609, North Sewickley Township, at Turnpike Station 491+00, Beaver County, thence in an Easterly direction 27,547 feet to a point approximately 351 feet West of Legislative Route 04011 (TR 989), New Sewickley Township, at Turnpike Station 766+47.19 in Butler County, a distance of approximately 5.22 miles.

The approximate quantities of the principal items are as follows:

Class I Excavation, 856,500 cubic yards; Class II Excavation, 26,600 cubic yards; Borrow Excavation, 154,400 cubic yards; Reinforced Concrete Pavement, 145,500 square yards; Class A Concrete, 2,230 cubic yards; Class B Concrete, 9,320 cubic yards; Plain Steel Bars, 979,200 pounds; Fabricated Structural Steel, 1,547,200 pounds.

For the construction of structures and the grading, drainage and paving of Turnpike Section 30A, part of the Western Pennsylvania Turnpike Extension in New Sewickley Township, Beaver County and Cranberry Township, Butler County, Commonwealth of Pennsylvania. This section being situated as follows:

Beginning at a point approximately 351 feet West of Legislative Route 04011 (TR 989), in New Sewickley Township at Turnpike Station 777+91, Beaver County, thence in an Easterly direction 20,317 feet to a point approximately 3,000 feet West of Legislative Route 10002, Cranberry Township, at Turnpike Station 112+50, in Butler County, a distance of approximately 3.85 miles.

The approximate quantities of the principal items are as follows:

Class I Excavation, 739,300 cubic yards; Class II Excavation, 15,300 cubic yards; Borrow Excavation, 10,000 cubic yards; Reinforced Concrete Pavement 108,150 square yards; Class A Concrete, 1,950 cubic yards; Class B Concrete, 3,800 cubic yards; Plain Steel Bars, 446,000 pounds, Fabricated Structural Steel, 393,000 pounds.

For the construction of structures and the grading, drainage and paving of Turnpike Section 30B, part of the Western Pennsylvania Turnpike Extension in Cranberry Township, Butler County, Commonwealth of Pennsylvania. This section being situated as follows:

Beginning at a point approximately 3,000 feet West of Legislative Route 10002, in Cranberry Township at Turnpike Station 112+50, Butler County, thence in an Easterly direction 12,903 feet to a point at the Butler-Allegheny County Line in Cranberry Township, at Turnpike Station 241+53.14, Butler County, a distance of approximately 2.44 miles.

The approximate quantities of the principal items are as follows:

Class I Excavation, 352,700 cubic yards; Class II Excavation, 13,800 cubic yards; Borrow Excavation, 34,100 cubic yards; Reinforced Concrete Pavement, 98,100 square yards; Class A Concrete, 850 cubic yards; Class B Concrete, 4,000 cubic yards; Plain Steel Bars, 370,700 pounds; Fabricated Structural Steel, 431,600 pounds.

Copies of plans, specifications, and other contract documents, including cross-sections are on file and open to public inspection at the offices of the Pennsylvania Turnpike Commission located at Harrisburg, Pennsylvania, on 12 January 1950. Plans, specifications, cross-sections and other contract documents will not be available before this date for inspection or for mailing to prospective bidders. Copies of specifications for grading, drainage, paving and structures may be purchased from the Pennsylvania Turnpike Commission for the sum of five ($5.00) dollars per copy. Copies of cross-sections may be purchased from the Pennsylvania Turnpike Commission for the sum of fifty ($50.00) dollars per set, for each section.

Plans and contract documents, for each section, exclusive of cross-sections and specifications may be obtained from the Commission upon deposit of Ten ($10.00) Dollars for each set, such deposits to be refunded in full to any actual bidder upon return of such documents in good condition within five (5) days after the date of the opening of the bids. Refund will be made for all plans, contract documents, and cross-sections returned, if the project is withdrawn from letting by the Pennsylvania Turnpike Commission. Remittances are payable to the Pennsylvania Turnpike Commission and must accompany requests for drawings, specifications, contract documents, and cross-sections.

The Pennsylvania Turnpike Commission reserves the right to award each section as a separate contract and/or in any combination of contracts.

The character and amount of bid security to be furnished by bidder is stated in the Instructions to Bidders.

No bids may be withdrawn for thirty (30) days after the scheduled closing time for receipt of bids.

PENNSYLVANIA TURNPIKE COMMISSION
Harrisburg, Pennsylvania
Jan. 5, 1950.

James F. Torrance
Secretary and Treasurer

CONTRACTORS
Watch this Section
for New Projects

Publish your announcement thru the "Proposals Section" of Engineering News-Record and get their bids.

OFFICIAL PROPOSALS

OFFICIAL PROPOSALS
(Continued from page 104)

CORPS OF ENGINEERS, BALTIMORE DISTRICT, BALTIMORE, MD.—Sealed bids will be received here until 11:00 a.m., E.S.T, 15 February 1950, and then opened for furnishing plant, labor and materials for the Construction of Williamsport Flood Protection Project—Levee Unit 6C, Williamsport, Lycoming County, Pennsylvania. Plans may be obtained by a deposit of $30.00 per set in the form of cash, CERTIFIED CHECK or postal money order payable to The Treasurer of the United States and mailed to the District Engineer, Baltimore District, Corps of Engineers, 24th Street and Maryland Avenue, P. O. Box 1715, Baltimore 3, Maryland. (515)

Bids: January 25, 1950 (516)

Furnishing and Delivering Manhole Frames, Covers and Steps

WASHINGTON SUBURBAN SANITARY COMMISSION

Sealed proposals for furnishing and delivering three-hundred (300) manhole frames and covers and fifteen-hundred (1500) manhole steps will be received at the office of the Purchasing Agent of the Washington Suburban Sanitary Commission, Hamilton Street, Hyattsville, Maryland, until 10:30 A. M. Eastern Standard Time, January 25, 1950 at which time and place they will be publicly opened and read.

Specifications may be obtained from W. R. Douglas, Purchasing Agent of the Commission, Hyattsville, Maryland.

Dwight H. Gait (Chairman)
Leland G. Worthington
Warren Browning
Commissioners

Bids: February 2, 1950 (512)

Construction of Streets

STATE OF NEW JERSEY
STATE HIGHWAY DEPARTMENT
TRENTON

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

EAST MAIN ST., MAIN ST. & MAPLE AVENUE

Construction of East Main Street and Maple Avenue, from Fort Avenue to the Burlington County Line, Plumstead Township, Ocean County, Federal Aid Secondary Project No. S-131(1). Length 1.009 miles.

Estimated:
- 3,122 cu. yds. Excavation—Unclassified
- 24,050 sq. yds. Mod. Pen. Macadam, 3" thick
- 1,213 tons Bituminous Conc., Type "A" or "B"
- 7,630 lin. ft. Plain Concrete Curb
- 4,228 sq. yds. 4" Concrete Sidewalk
- 1,876 lin. ft. Drainage

Bids for the above will be received at the office of the State Highway Department, Room 102, State House Annex, Trenton, N. J., on Thursday, February 2, 1950 at eleven o'clock (11:00 A. M.—EASTERN STANDARD TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

NOTE: The proposed project is a "Federal Aid Secondary Project" authorized by the provisions of Title 27 of the Revised Statutes of New Jersey and Supplements and by Sections 2, 3 and 4, P. L. 521, 78th Congress, and is to be performed in accordance with the special provisions and requirements of the Bureau of Public Roads, Department of Commerce, as outlined in the specifications, which provisions require that labor be employed from lists furnished by the State Employment Service, 213 Main Street, Toms River, N. J. and 55-61 Main Street, Mt. Holly, N. J. The attention of bidders is directed to the special provisions covering subletting or assigning the contract. The minimum wage paid to common labor employed on this contract shall be 75¢ per hour.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, N. J. and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 102, State House Annex, Trenton, N. J. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.000 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: Spencer Miller, Jr.
State Highway Commissioner

Bids: February 2, 1950 (513)

Construction of Roads

STATE OF NEW JERSEY
STATE HIGHWAY DEPARTMENT
TRENTON

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

ROUTE 23, SECTION 8A

Construction of Route 23, Section 8A, N.Y.S. & W. Railroad Bridge and Approaches near Hamburg, Hardyston and Wantage Townships, Sussex County. Length 0.531 miles.

Roadway Items

Estimated:
- 27,300 cu. yds. Roadway Excavation-Earth
- 73,300 cu. yds. Borrow Excavation
- 1,050 sq. yds. 3" Pen. Mac. Surface on 4" Mac. Base Course
- 7,930 sq. yds. 1½" Bit. Conc. Surface, 3" Pen. Mac. Inter. Course, & 4" Mac. Base Course

Bridge Items
- 2,805 cu. yds. Concrete in Structures
- 164,563 lbs. Rein. Steel in Structures

Bids for the above will be received at the office of the State Highway Department, Room 102, State House Annex, Trenton, N. J., on Thursday, February 2, 1950, at eleven o'clock (11:00 A. M.—EASTERN STANDARD TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, N. J. and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk State Highway Department, Room 102, State House Annex, Trenton, N. J. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: Spencer Miller, Jr.
State Highway Commissioner

Bids: February 2, 1950 (514)

Construction of Gravel Shoulders

STATE OF NEW JERSEY
STATE HIGHWAY DEPARTMENT
TRENTON

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

ROUTE 43, SECTION 12B

Construction of Northeasterly Gravel Shoulder on Route 43, Section 12B, from Hamburg Avenue, Egg Harbor City, to Union Avenue, Elwood, Mullica Township, Atlantic County. Length 4.506 miles.

Estimated:

Roadway Items
- 13,400 cu. yds. Roadway Excavation-Earth
- 1,900 cu. yds. Wet Excavation
- 25,700 sq. yds. 8" Gravel Shoulder
- 7,700 lin. ft. Rein. Concrete Culvert Pipe
- 100 lin. ft. Cast Iron Culvert Pipe
- 660 lin. ft. Corrugated Metal Pipe arches.

Bridge Items
- 97 cu. yds. Concrete in Structures
- 5,000 lbs. Rein. Steel in Structure

Bids for the above will be received at the office of the State Highway Department, Room 102, State House Annex, Trenton, N. J., on Thursday, February 2, 1950, at eleven o'clock (11:00 A. M.—EASTERN STANDARD TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, N. J. and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 102, State House Annex, Trenton, N. J. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: Spencer Miller, Jr.
State Highway Commissioner

(Continued on page 104)

OFFICIAL PROPOSALS
(Continued from page 105)

Bids: January 25, 1950 (504)

State Highway Work

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of (1) the Highway Law and special provisions therein for projects financed with federal aid funds, (2) the Canal Law, sealed proposals will be received until ten-thirty o'clock A.M., eastern standard time on Wednesday, Jan. 25, 1950 by Henry A. Cohen, Director, Bureau of Contracts & Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects: Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts & Accounts, Albany, N. Y., and at the office of the District Engineers noted below, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for plans and proposal forms for each contract containing 1 to 15 sheets is $5.00; 16 to 30 sheets, $10.00; over 30 sheets, $20.00. A refund will be made in full to bidders for the return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
		DISTRICT No. 2				
		L. Ketchum, Dist. Engr., 109 No. Genesee St., Utica, N. Y.				
Oneida		Sperry's Bridge Over Forest-Port Feeder and Approaches	0.06	Asp. Conc. 32'7½" I-Beam	$1,600 Plans $5	$29,310.50
		DISTRICT No. 5				
		C. R. Waters, Dist. Engr., 65 Court St., Buffalo, N. Y.				
Erie	FAC 50-2	Hamburg Turnpike; City of Lackawanna (Smokes Creek Bridge), Proj. U-750(5)	0.01	Widening 54' 5¼" I-Beam	$4,000 Plans $5	$69,000.00
		DISTRICT No. 8				
		J. S. Bixby, Dist. Engr., Pleasant Valley Rd., Poughkeepsie, N. Y.				
Dutchess	TSP 50-1	Taconic State Parkway Sect. 5, 6, and 7	13.01	Roadside Development	$500 Plans $5	$15,000.00
Dutchess	TSP 50-2	Taconic State Parkway Sect. 5, 6, and 7 and Access Drive, Rt. 82	.....	Waterproofing Conc. Pavt.	$600 Plans $5	$10,000.00
Orange	FARC 50-1 FASH 50-1 FAC 50-1	Newburgh-Woodbury, S. H. 42 Moodna Bridge-Newburgh Pt. 2 and Pt. 2-A Proj. U-350(11)	0.36	9" Cem. Conc. Pavt. 44' Wide, 10 Span Alpha I-Beam 568.83' Alpha—$1,412.84	$35,000 Plans $10	$650,000.00
		DISTRICT No. 10				
		J. J. Darcy, Dist. Engr., Montauk Highway at Little E. Neck Rd., Babylon, L. I., N. Y.				
Bronx	FABRF 50-1	Bronx River Parkway So. Ext. Bruckner Blvd. to E. 233d St.; Proj. U-979(7)	4.52	8" Cem. Conc. Pavt. 264.34' Wide=4.36 Mi. Misc. Work=0.16 Mi.	$120,000 Plans $20	$2,065,000.00
Bronx	FGBRF 50-2	Sep. of Grades of the N. Y. C. & H. R. R. (Harlem Div.) With Bronx River Parkway, So. Ext. Proj. UG 979(8)	0.11	Grading and Structures 160' 7" Plate Girder	$52,000 Plans $10	$939,000.00
		DISTRICT No. 10				
		J. J. Darcy, Dist. Engr., Montauk Hwy. at Little E. Neck Rd., Babylon, Long Island, New York				
Queens	FAVWE 50-1	Van Wyck Expressway Cont. 6-A, (Archer Ave. to So. Conduit Ave.) Proj. U-1085(5)	2.51	9" Cem. Conc. Pavt. 2636' Wide=2.20 Mi. Misc. Work=0.31 Mi.	$105,000 Plans $20	$1,798,000.00

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by cash, draft or certified check payable to the order of "State of New York, Commissioner of Taxation & Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instructions to Bidders".

When optional types are permitted on contracts with federal funds, bidders must state in the space provided in the proposal the exact designation of the optional type upon which the proposal is predicated.

The right is reserved to reject any or all bids.

B. D. TALLAMY
Supt. of Public Works

(502)

Announcement

NEW JERSEY TURNPIKE AUTHORITY

Sealed proposals will be received by the New Jersey Turnpike Authority for the following Projects.

CONTRACT NO. 2

The work to be performed under this Contract involves furnishing, placing and compacting various graded borrow excavation materials in embankments, stabilizing existing ground by the use of vertical sand drains, excavating portions of embankment placed as overload and depositing the materials so excavated on the embankments, excavating ditches for mosquito control, and other incidental work in connection with the construction of the New Jersey Turnpike from the North Abutment of the proposed Passaic River Structure to the South Abutment of the proposed Hackensack River Structure in the Town of Kearny, Hudson County, New Jersey.

Principal items of work include:

Muck Excavation	4,400 cu. yds.
Roadway Excavation, Common	10,000 cu. yds.
Borrow Excavation	788,000 cu. yds.
Channel Excavation	4,500 cu. yds.
Rubble Stone Gutter	1,800 sq. yds.
Vertical Sand Drains	690,000 lin. ft.

Contract documents may be seen, and may be inspected by prospective bidders during office hours, after January 6, 1950, at the office of the New Jersey Turnpike Authority, 65 Prospect Street, Trenton, New Jersey, and at the office of the Engineers, Edwards and Kelcey, Frederic R. Harris, Inc. and O. J. Porter & Company, Associated, 3 William Street, Newark, New Jersey.

Contract documents will be furnished on a deposit of $15.00 for each set not including the Plans showing the grading cross-section and an additional deposit of $15.00 for each set of Plans showing the grading cross-sections upon application to the New Jersey Turnpike Authority, 65 Prospect Street, Trenton 8, New Jersey, and such deposits will be refunded upon return of the contract documents in a good condition within 10 days after the opening of the proposals.

CONTRACT NO. 5

The work to be performed under this Contract involves the construction of the two river piers and their foundations and fenders and other incidental work in connection with the constructions of the Passaic River Bridge which will form part of the New Jersey Turnpike in the City of Newark, Essex County and the City of Harrison in Hudson County.

Principal items of work include:

Based Upon Pneumatic Caisson Method

Foundation Excavation, 5,020 cu. yds.; Structural Steel in Caissons, 277,000 lbs.; Concrete in Foundations, Pedestals and Pier Bents, 7,940 cu. yds.; Granite Masonry, 5,650 cu. ft.; Reinforcement Steel, 782,000 lbs.; Fenders, Lump Sum.

Based Upon Open Cofferdam Method

Foundation Excavation, 5,060 cu. yds.; Concrete in Foundations, Pedestals and Pier Bents, 7,490 cu. yds.; Granite Masonry, 5,650 cu. ft.; Reinforcement Steel, 735,000 lbs., Fenders, Lump Sum.

Contract documents may be seen, and may be inspected by prospective bidders during office hours, after January 6, 1950 at the office of the New Jersey Turnpike Authority, 65 Prospect Street, Trenton 8, New Jersey and at the office of the Engineers, Ammann & Whitney, 3 William Street, Newark, New Jersey, or 76 Ninth Avenue, New York, New York.

CONTRACT NO. 6

The work to be done under this Contract involves the construction of four river piers and two fenders in connection with the construction of the New Jersey Turnpike across the Hackensack River, near Laurel Hill, Hudson County, New Jersey.

Principal items of work include:

Concrete, 16,100 cu. yds.; Reinforcement Steel, 390,000 lbs.; Steel Piles, 52,600 lin. ft.; Granite Masonry, 12,100 cu. ft.; Treated Timber Piles, 13,400 lin. ft.; Creosoted Timber, 83 M. Feet B. M.

Contract Documents may be seen, and may be inspected by prospective bidders during office hours, after January 6, 1950, at the office of the New Jersey Turnpike Authority, 65 Prospect Street, Trenton 8, New Jersey and at the office of the Consulting Engineers, Howard, Needles, Tammen and Bergendoff, 55 Liberty Street, New York, New York.

Contract documents for Contracts Nos. 5 and 6 will be furnished on a deposit of $15.00 for each set upon application to the New Jersey Turnpike Authority, 65 Prospect Street, Trenton 8, New Jersey, and such deposits will be refunded upon return of the contract documents in a good condition within 10 days after the opening of proposals.

Proposals will be received at the office of the New Jersey Turnpike Authority, 65 Prospect Street, Trenton 8, New Jersey until 10:30 o'clock on the morning of January 31, 1950, and thereafter in the Veterans Room of the War Memorial Building, Memorial Drive at Willow Street, Trenton, New Jersey, until 11:00 A.M. on the same date, at which latter time and place said proposals will be publicly opened and read.

The receipt and opening of proposals is subject to proper prequalification of the bidder in accordance with the regulations adopted by the New Jersey Turnpike Authority. Bidders must also submit with their proposal a revised financial statement and a statement of plant and equipment.

Proposals must be made upon the standard proposal forms in the manner designated in the Standard Specifications for Construction of the New Jersey Turnpike and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and the number of the contract on the outside, and must be accompanied by a *certified check* drawn to the order of the New Jersey Turnpike Authority *and a proposal bond, each for not less than five (5) percent of the amount of the proposal*, but not less than $500.00 nor more than $200,000.00 and must be delivered with proposal on or before the hour named. Copies of the proposal form to be used for submitting proposals, of the form for proposal bond, of the form to be used for financial statement and plan and equipment statement to be submitted with proposal, and special addressed envelopes are furnished in detached form with the Contract Documents.

The Contracts will be awarded or proposals rejected within thirty (30) days from the date of opening proposals. The right is reserved to reject any or all proposals.

NEW JERSEY TURNPIKE AUTHORITY
Paul L. Troast
Chairman.

(Continued on page 107)

CONTRACTORS WATCH THIS SECTION
for New Projects

Publish your announcements thru the "Proposal Section" of Engineering News-Record and get their bids.

OFFICIAL PROPOSALS

Bids: February 23, 1950 (507)

Construction of Sewage Works

TOWN OF FAIRFIELD
CONNECTICUT
NOTICE TO CONTRACTORS

Sealed Proposals for construction of Sewage Works will be received by the Purchasing Authority and the Sewer Commission at the office of the Board of Selectmen, in the Town Hall, 611 Old Post Road, Fairfield, Connecticut, until 2:30 P. M. Eastern Standard Time on February 23, 1950, and then publicly opened and read. No proposal will be accepted after said hours. Proposals will be received on the following contracts:

Contract II—Sewage Treatment Plant

Contract III—Outfall Sewer

Information for Bidders, Proposal forms, Specimen Contract, Plans and Specifications and copies or specimens of all pertinent documents may be examined at the offices of Bowe, Albertson & Associates, Engineers, 110 William Street, New York City, New York, and at the office of the Town Engineer, Silliman School, 608 Jennings Road, Fairfield, Connecticut, between the hours of 10 A. M. and 4 P. M. daily except Saturdays, Sundays and holidays, and obtained upon making a deposit of fifteen ($15.00) dollars, which will be refunded within thirty (30) days after the date when the proposals are opened, upon return of the aforementioned data, undamaged.

A bid bond in the amount of 10% of each bid must be submitted by the bidder with his bid as a guarantee that, in case the contract is awarded to him, he will, within ten days thereafter, execute such contract, and furnish a satisfactory Performance and Labor and Material Bond.

The successful bidder will be required to furnish a Performance and Labor and Material Bond in the full amount of the bid, satisfactory to the Sewer Commission as to form and sureties.

The Town of Fairfield reserves the right to reject all bids. Bids which are irregular in form, incomplete, conditional or qualified may be disregarded and rejected as improper except that the Purchasing Authority and the Sewer Commission may waive any defects or irregularities.

PURCHASING AUTHORITY
TOWN OF FAIRFIELD
By Dimill L. Kinnie
First Selectman
SEWER COMMISSION,
TOWN OF FAIRFIELD
By: Abner Mitchell
Chairman
BOWE, ALBERTSON & ASSOCIATES
Engineers

Additional Proposals on Pages 105, 106, 119.

EMPLOYMENT

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (18)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

CIVIL SERVICE

ENGINEERING ASSISTANT Grade "C" Muskegon, Michigan. Salary, $3000-$3300 Yearly. Age, 21 to 40 years; male; should be high school graduate and have a course in engineering drafting, or equivalent; must have two years' experience as a draftsman in civil engineering work and as a member of a surveying party; file applications before March 1, 1950; nonresidents eligible; preference given to veterans. Write Muskegon Civil Service Board, City Hall, Muskegon, Michigan.

POSITIONS VACANT

STRUCTURAL CHECKER-detailer. All type structures. State qualifications, availability. Location East. P-1818, Engineering News-Record.

FLOOD CONTROL Engineer. Prefer engineer with general experience on water and flood control projects and Corps of Engineers reports. Must be able to meet the public. Opportunity to affiliate with a progressive agency responsible for developing a sound State water control policy. Salary $4800 per year. P-1863, Engineering News-Record.

WANTED—Two experienced Sewer Construction Foreman and Superintendent for Concrete Pipe and Rock Tunnel—Inquire United Foundation Corporation, 680 Lexington Rd., Union, N. J., or phone Unionville 2-4257.

PAVING SUPT. Able take charge entire operation concrete. Location New York State. Write experience, salary required. P-1862, Engineering News-Record.

WANTED—YOUNG Engineer with some experience in estimating for building contractors. Give references and state salary required. Location West Virginia. P-1928, Engineering News-Record.

When Answering

BOX NUMBERS

to expedite the handling of your correspondence and avoid confusion, please do not address a single reply to more than one individual box number. Be sure to address separate replies for each advertisement.

POSITIONS VACANT

"Checkers and detailers for structural steel shop drawings; position permanent, pleasant working conditions and good salaries for competent men; state age, qualifications, salary, and when available in first reply; location Central New York."

P-1923, Eng. News-Record
330 W. 42nd St., New York 18, N. Y.

WANTED
BRIDGE DESIGNERS,
DESIGNER DRAFTSMEN, RESIDENT
HIGHWAY ENGINEERS, SOILS ENGINEER
Experienced men wanted. State qualifications, age, salary and date available in first letter. Construction period, 24 months. Location, Eastern or Western Pennsylvania.
P-1921, Engineering News-Record
330 West 42nd St., New York 18, N. Y.

WANTED—SALES ENGINEER

For established firm in the Pittsburgh district making materials used widely in bridge construction and industrial plants. Must be experienced and preferably have civil engineering education.

P-1881, Engineering News-Record
330 W. 42nd St., New York 18, N. Y.

POSITIONS VACANT

CONSTRUCTION SUPT. with proven record to handle multi-unit housing and dormitories, including trades. Must be qualified to organize and handle projects in $1,000,000.00 class. In reply give full qualifications, references, salary expected and availability. P-1424, Engineering News-Record.

STRUCTURAL STEEL Detailer for buildings, at least two years experience. Civil graduate preferred. Top Salary. Full information, work sample and snap shot required. Soule Steel & Iron Co., Charlotte, N. C.

WANTED, SEVERAL engineering graduates, under 35, by large industrial fire prevention organization maintained by national insurance group, for field work involving periodic inspections and special consulting service. Permanent. P. 1994, Engineering News-Record.

ESTIMATOR, THOROUGHLY experienced in figuring masonry. Long established Western New York contractor. State age, experience and salary desired. P-1993, Engineering News-Record.

CONTRACTOR'S ENGINEER — Estimator. Thoroughly experienced in office and field in heavy construction work. Eastern area. Write full qualifications and salary experience. P-1934, Engineering News-Record.

SALARIED POSITIONS $3,500—$35,000

If you are considering a new connection communicate with the undersigned. We offer the original personal employment service (40 years recognized standing and reputation). The procedure, of highest ethical standards, is individualized to your personal requirements and develops overtures without initiative on your part. Your identity covered and present position protected. Send only name and address for details.
R. W. BIXBY, Inc., 272 Dun Bldg., Buffalo 2, N.Y.

SELLING OPPORTUNITY OFFERED

PACIFIC COAST manufacturer desires engineering sales representative on Eastern Seaboard for a new, non-competitive product in the concrete construction field. Experienced in working with distributors. Personal interview arranged in New York week January 23d. Write complete information RW-1942, Engineering News-Record.

EMPLOYMENT SERVICES

SALARIED PERSONNEL, $2,000-$25,000. This confidential service, established 1927, is geared to needs of high grade men who seek a change of connection under conditions assuring, if employed, full protection to present position. Send name and address only for details. Personal consultation invited. Jira Thayer Jennings, Dept. L, 241 Orange St., New Haven, Conn.

POSITIONS WANTED

GENERAL SUPT. Construction-Project Manager, Graduate Civil-Mech. Engineer, 25 years diversified experience, including estimating; 15 yrs. as general supt.; seven yrs. foreign work, varied projects including refineries, industrial-chemical-steam-hydro electric-power and war plants, docks, utilities, airports, highways, railroads, public works, fireproof buildings, mass-housings. Speak, read Spanish, Portuguese, German. A-1 references. Native American. Good health. Available immediately. Foreign assignment preferred. PW-1785, Engineering News-Record.

QUANTITY ESTIMATOR. Grad. Civil Eng'r. Six years experience preparing quantities for pricing public, commercial, indus. bldgs. PW-1796, Engineering News-Record.

CHIEF ESTIMATOR for General Contractor Available. Experienced all types General Construction. Current volume $60,000,000 per annum. Base salary $12,000 per year. Excellent references. PW-1813, Engineering News-Record.

PROJECT MANAGER. Graduate C.E. Architects Representative. Field and Resident Engineer. New York-Philadelphia desired. Available Jan. 31st. PW-1939, Engineering News-Record.

(Continued on page 108)

SEARCHLIGHT SECTION

EMPLOYMENT • BUSINESS • OPPORTUNITIES • EQUIPMENT—USED or RESALE

UNDISPLAYED RATE:
(Not available for equipment advertising)
$1.20 cents a line, minimum 4 lines. To figure advance payment count 5 average words as a line.
INDIVIDUAL EMPLOYMENT WANTED undisplayed advertising rate is one-half of above rate, payable in advance.
PROPOSALS, $1.00 a line an insertion.

INFORMATION.
BOX NUMBERS care publication New York, Chicago or San Francisco offices count as 1 line additional in undisplayed ads.

DISCOUNT of 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

DISPLAYED—RATE PER INCH:
The advertising rate is $11.50 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches—to a page. E.N.R.

NEW ADVERTISEMENTS received by January 23rd appear in February 2nd issue subject to limitation of space available.

A COURSE OF INSTRUCTION BY MAIL IN

STRUCTURAL ENGINEERING

Thirty-ninth Year

OUR COURSES HAVE HELPED THOUSANDS to better positions and to pass State Board Examinations

- Complete Structural Engineering Course.
- Public Works Structures.
- Architectural Engineering.
- Special Course C (State Board Exams).
- Reinforced Concrete Engineering.
- Structural Steel Designing.

Monthly payments permissible. Information sent without obligation. WRITE TODAY

WILSON ENGINEERING CORPORATION

College House Offices • Harvard Square • Cambridge, Mass., U. S. A.

POSITIONS WANTED
(Continued from page 107)

DRAFTSMAN-INSTRUMENT Man; age 26, experienced in roads, utilities, pipelines, refineries, and government work. Desires position with engineer or contractor. Available early January. Prefer overseas or domestic; located New Mexico. PW-1983, Engineering News-Record.

RECENT U. of Illinois graduate with B.S. in C.E. desires position in hydraulics or water supply fields. Age 25, married. PW-1980, Engineering News-Record.

CIVIL ENGINEER — Executive. Registered P.E., N.Y. Thirty-five years broad experience, about twenty of which in responsible charge field and office on highways, municipal and general construction in Latin America and Far East. Fluent Spanish. Excellent credentials. Available for foreign assignment. Thuman, P.O. Box 126, Merritt Island, Fla.

CONSTRUCTION MANAGER or General Supt. available. 45. Married. Now located in Florida. Could manage Florida office for reliable contractor. 22 years experience estimating, managing and supervising construction. A Civil Engineer ready to accept complete responsibility. PW-1854, Engineering News-Record.

MECHANICAL ENGINEER—Age 28, experienced in take-off, purchasing, expediting, and field supervision on mechanical and process equipment. Desires position with General Contractor or Mechanical Subcontractor. Midwest location preferred. PW-1775, Engineering News-Record.

CONSTRUCTION SUPERINTENDENT, 18 years experience, heavy grading projects, earthen dams, airports, flood control. Can completely manage business in this field. PW-1875, Engineering News-Record.

CONSTRUCTION SUPERINTENDENT or Project Manager. Over 15 years experience; Industrial, Commercial, and Government work. Guarantee satisfactory service. Excellent references. PW-1896, Engineering News-Record.

ACCOUNTING, BOOKKEEPING, payroll and tax service. Weekly, monthly, special assignments. Metropolitan area. PW-1857, Engineering News-Record.

PRESSURE GROUTING SUPT. Available with experience men. Or will train your crew. PW-1816, Engineering News-Record.

POSITIONS WANTED

CONCRETE FOREMAN—Also handle laborers in many branches of construction. Available now. PW-1815, Engineering News-Record.

CIVIL ENGINEER, 29, married, M.S., registered. Sanitary experience with consultant. Desires midwest employment in water supply and or waste treatment. PW-2007, Engineering News-Record.

STRUCTURAL ENGINEER, Southwest, desires new connection. Twenty years varied experience including responsible work with engineering firms, architects, contracting organizations, and as independent consultant. Graduate, registered in three states. PW-2006, Engineering News-Record.

PART TIME WORK WANTED

FREE LANCE Method—Can do your structural design and detailing, complete. Save you money, time and worry. PTWW-1897, Engineering News-Record.

SELLING OPPORTUNITIES WANTED

OWNER'S REPRESENTATIVE. Guarantee contractor's complete compliance with owner's requirements. Over 15 years' experience; including construction superintendent with reputable contractors and major industries. RA-1894, Engineering News-Record.

MINNEAPOLIS-ST. PAUL and five state area; 15 years experience in design, site supervision, and technical sales. Minnesota registration. Prefer mechanical building products. SA-1981, Engineering News-Record.

BUSINESS OPPORTUNITY

All or part

of specialized contracting business operating throughout United States, past earnings from $25,000.00 to $75,000.00 yearly. Attractive proposition to capable construction man with financial responsibility. BO-1986, Engineering News-Record.

PATENT ATTORNEY

Patent Practice

before U. S. Patent Office. Validity and infringement investigations and opinions. Booklet and form "Evidence of Conception" forwarded upon request. Lancaster, Allwine & Rommell, Registered Patent Attorneys, Suite 434, 815-15th Street, N. W., Washington 5, D. C.

AVAILABLE IMMEDIATELY

Graduate Engineer or Assistant Supt.

with long experience in Industrial, Oil Refineries, Military, Chemical, and Heavy construction. Main experience in Middle East and So. America. Now in Latin America. Know Spanish

PW-1952, Engineering News-Record
330 W. 42nd St., New York 18, N. Y.

DETAILING, DESIGN, DRAFTING
DONE
expertly and promptly by
struc., mech., and elec. specialists
TECHNO ASSOCIATES
505 FIFTH AVE., N.Y.C., MU-2-0326

LEARN TO ESTIMATE

Today, more than ever before, you must know how to analyze building costs. If you want to become a successful builder, learn how to prepare a correct estimate in a hurry. Get in on the profitable work now available wherever you turn. Your success is assured if your estimates are right; otherwise you are licked before you start.

The Tamblyn System of Estimating will make a real estimator out of you in a few weeks of your spare time. We are so sure that you will want to learn it, that we will send you our complete home study course for ten days examination absolutely free. If you don't think it is the finest thing you ever saw, just return it and it won't cost you a cent. If you like it and want it, send us $8.75 when 10 days are up and $7.50 per month until $38.75 is paid.

This estimating system is based on forty years of actual construction experience. It has been sold all over the world for more than twenty years. Thousands of estimators and contractors swear by it. Our offer isn't hot air and big talk. We don't give you a diploma or a lapel button, but we do teach you down to earth estimating which will bring you profitable business.

Just send your name and address today, and we will mail you the complete course at once for your approval.

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1115 So. Pearl St., E-372
Denver, Colo.

"WE HAVE FED MILLIONS"
30 Years Experience in the
HOUSING and FEEDING of MEN
Valentine B. Kane & Assoc.
1410 State St. New Haven 11, Ct.

A National Organization for
FEEDING and HOUSING
employees of Contractors . . . Railroads . . . Industries
OLYMPIC COMMISSARY CO.
CHICAGO 6, ILL.: 302 S. Canal St.
Phone HA 7-1670
SEATTLE: 316 Second Ave., South
MINNEAPOLIS: 105 Nicollett Ph: Atl 4845

L.B.SMITH INC. OFFERS

SHOVELS — CRANES

Lorain 41, ¾-yd crawler shovel & crane.
Lorain 40, ¾-yd comb. shovel, clam, crane.
Lorain 40 truck crane. Waukesha engine, mounted on Mack chassis.
P&H Model 255A crawler shovel.
Insley K-12, ½-yd shovel.

SHOVEL & CRANE ATTACHMENTS

1-yd to 1½-yd clam boom for Lorain, Lima or Northwest.
Chain crowd L-40-41 shovel attachment.
Chain crowd L-75A shovel attachment.
P&H 203 shovel attachment.
Chain crowd Lorain 30A shovel attachment.
Lorain 40 Hi-Lift shovel attachment.
Bucyrus-Erie 30B tunnel front attachment.

BACKHOE BUCKETS

¾-yd Lorain, 40, LBS #6105, 44" cutting width, teeth, sheave.
27" outside width drop bottom type LBS #1033, good condition.
26" outside width solid bottom type LBS #4377, good condition.
¾-yd Amsco 40" cutting width, LBS #8101.

NEW TAGLINES

McCaffrey Model 648 for 1¼ to 2-yd crane.
McCaffrey Model 636 for ¾-yd to 1-yd crane.

SHOVEL DIPPERS

Lorain 41, ¾-yd, LBS #7433, new condition.
New Lima 1-yd, Amsco, LBS #2295.
Bucyrus-Erie 1¼-yd gas air, LBS #3782, fair.
Lorain 75 manganese 1¼-yd, LBS #7233, teeth and bail.
Lorain 75B, 1¼-yd extended lip, 1¾-yd LBS #2260.
Pettibone-Mulliken 2-yd Lorain 82 or 820, manganese, LBS #5361.
Pettibone-Mulliken 2-yd for 3500 Manitowac LBS #5763.

CLAM—DRAG—SCRAPER BUCKETS

AIR COMPRESSORS

Worthington two-stage, water cooled, vertical 250#, 60 CFM, new condition.
Gardner-Denver, 105 foot, with air receiver, hose reel, driven by power take-off and mounted 1941 Ford.
Gardner-Denver air-cooled 105 foot with receiver, V-Belt driven from power take-off and mounted on 1942 Ford chassis with Wood two-yard dump body.
Gardner-Denver 2-stage 160 ft., skid Mtd.
Worthington 210 cubic foot, two-stage air-cooled, on steel wheels, Hercules diesel.
Chicago Pneumatic 210 cubic foot, two-stage, air-cooled, Caterpillar diesel on four rubber tired wheels.
Gardner-Denver 315 cu. ft. two-stage, skid mounted, Murphy four-cylinder diesel.
Pennsylvania 12" x 10" class 3A single cylinder, 355 cubic foot P.D., flat belt driven, 50 HP slip ring motor.

QUARRY EQUIPMENT & BINS

18 x 36 Farrell deep jaw crusher.
10 x 36 Cedarapids, practically new.
10 x 7 Allis Chal. Blake type jaw crusher.
Williams 20-S pulverizer.
Cedarapids No. 1 Kubit.
60 ton 2 compartment storage bin with clam shell gates.
New 16 x 16 double clamshell gates.
20" x 6'6" Belt Type Magnetic Separator.

TRUCKS—TRAILERS

1½-ton Ford & Chevrolet.
2½-ton GMC, New and rebuilt.
Sterling COE Model 255GCS tandem drive tractor, 9.00x24 tires, 200 HP Cummins supercharged diesel, complete with 40-ton Rogers low bed equipment trailer, 16—7.50 x20 tires, airbrakes, outriggers, excellent condition.
2,000 gallon tanks on semi-trailer mounting.
New and rebuilt dump bodies.
6x6 7½-ton Reo

GASOLINE AND DIESEL ENGINES

New JXD Hercules Gasoline.
Buda, Hercules, Hill diesels, rebuilt.
New Murphy 4 and 6 cylinder diesels.
GM 6 and 12 cylinder diesels, practically new.

CONCRETE ROAD BUILDING & MISCELLANEOUS CONCRETE HANDLING EQUIPMENT

Pavers & Mixers

Ransome 34E dual drum, new October, 1943, with 36'9" boom, 1000 gallon auxiliary water tank, Cummins engine, rebuilt.

Concrete Finishers

Jaeger type "L" double screed, 10½'-12½', rebuilt.
Heltzel 10'-12' finisher, rebuilt.
Blaw-Knox gas-electric 10½'-12½', rebuilt.
2 Koehring 10'-12', rebuilt.
Koehring 10'-16' finisher, rebuilt.

Concrete Spreaders

Blaw-Knox type SA 10'-15' spreader, new 1943. New condition.

Concrete Road Forms

830'—Truscon 7"x8" forms, with stakes.
1380'—Heltzel 7"x8" forms, with stakes.
1300'—Blaw-Knox 8"x8" forms, with stakes.
4450—Heltzel 9"x8" forms, with stakes.
1430'—Heltzel 10"x8" forms, with stakes.
1010'—Blaw-Knox 10"x8" forms, with stakes.

Fine Grade Machines

Flynn surgrader 10'-12', rebuilt.
R.B. Fine Grader for 21' width, rebuilt.

Form Graders—2 of each

Cleveland formgrader, new condition.
Carr formgrader, new 1944, rebuilt.

BELT CONVEYORS

New 18"—24"—30"—36"
- "Sealed-for-life" idlers
- Lattice or channel frame
- Shipment from stock depending on length

GENERATORS & LIGHT PLANTS

1½ KW to 125 KW, alternating and direct current, gasoline and diesel powered.

GRADERS

New Warco D75 tandem driven grader, 12' blade, V-type scarifier, 13.00x24 tires all around, 24,500 lbs., International UD14A diesel engine.
York Corporation Model SR drawn grader with scarifier, 8' blade, rakes, pneumatics, wt. 7,900 lbs.

DIESEL POWERED TRACTORS

"FD" Cletrac with Buckeye blade and double drum P.C.U.

Phone **HARRISBURG, PA. 7-3431**

L.B.SMITH INC. CAMP HILL, PA. SUBURB OF HARRISBURG

WE OWN THE EQUIPMENT WE ADVERTISE

ROAD FORMS
Blaw-Knox 8000 ft. 9"x9"
Blaw-Knox 10000 ft. 8"x8". NEW.

ROAD ROLLERS
B-S tandem 3 axle 10-14 tons.
Hercules 3 wheel 10 tons.

CONCRETE PLANTS AND STORAGE BINS
Butler 300 ton, 2 compt. aggregate; one compt. 400 bbl. cement complete with scales and elevator.
Bulk cement bin 350 bbls. complete. New.
400 bbl. Bulk Cement bin weight batcher. New.
Two 100 ton 3 compt. aggregate bins. Complete.
400 ton 4 compt. Blaw-Knox aggregate bin.

SHOVELS—CRANES—DRAGLINES
Manitowac 3000A, 1-3/4 yd Shovel-Dragline.
Northwest 6, Diesel Crane, 1½ yds.
P & H 150 Truck Crane, Factory mounting.
Osgood 206 Shovel-Backhoe, new 1947.
Marion Model 37 1-¾ yd. Elec. Shovel.
Page 621S Dragline, Diesel, 6 yds., 135' boom.
Buc-Erie Model 54B 2½ yd. Diesel Shovel.
Buc-Erie 37B Diesel Crane, 100' boom, 35 tons.
Lorain Model 82 Diesel Shovel, 2 yds.
Lorain Model 820 Diesel Crane, 40 ton cap. 90' bm.
P&H Model 1055 Diesel Dragline, 80' boom.
Lima 1201 High Lift Diesel Shovel.
P&H Model 1055 High Lift Shovel, Buda Diesel
Northwest 80D 2½ yd. Diesel Shovel. 1946.
Byers Model 83 Shovel and Crane, 50' Bm.
P&H 855B 2 yd. Diesel Shovel. New Feb. 1947.
Buc-Monighan 6 to 8 yds. Diesel Dragline.
Buc-Erie 120B 4 to 5 yds. Elec. Dragline.

GRADERS—MIXERS—FINISHERS
Gallion Model 101 Grader.
Adams Model 412 Motor-Grader.
Austin-Western Model 99-M Auto Patrol Diesel.
Barber Greene Asphalt Spreader Model UD6.
B-G Model 879 Asphalt Finisher with extensions.
Adnun asphalt paver.
Koehring Model 34-E Twin Batch Paver.
Koehring longitudinal Finishers 20-24 ft.
Rex 3 yd. Transit Mixer on Int. 2½ ton chassis.
3 Ransome 4½ yd. Hi-dump transit mixers.
2 Jaeger 5 yd. transit mixer, unmounted.
Jaeger 2-yd. Transit Mixer on Mack 38

TRENCHERS
Barber-Greene Model 44C
Parsons Model 200 wheel type approx. 2 yrs. old
Buckeye Model 160 Capacity 16' deep 42" width
Cleveland Trencher Model 95.

ASPHALT PLANTS
Masden 3000# capacity. Complete.
Cedar Rapids "Speedline". Complete.
Cedar Rapids Model B. Complete.
Barber-Greene Model 848 "Travel Plant".
Barber-Greene 842 Portable Utility Plant. Complete

STIFF LEG AND GUY DERRICKS
American stiff leg 40 to 50 tons 80' boom.
American Terry Steel stiff leg 100 ton 75' boom.
American 20 ton stiff leg 90' bm.
American 15 ton stiff leg 65' boom.
Wiley Mod F. stiff leg 60' bm. NEW.
Kelley 25 ton steel Guy 100' mast 90' boom.
Stiff leg derrick 15 tons 100 ft. boom.

ROCK CRUSHING & SCREENING PLANTS
Cedar Rapids Junior Tandem plant. New 1947.
Cedar Rapids Portable "Pitmaster". Complete.
Pioneer Model 56 Portable Crushing Plant.
Cedar Rapids 2-A Portable Crushing & Screening

PUMPCRETES
REX 160-180-190-200 with fittings.

RICHARD P. WALSH CO.
30 Church St. New York 7, N. Y.
Cable RICHWALSH COrtlandt 7-0723-4

We Repair HOISTS
and other Construction Machinery

We also RENT all kinds of Equipment. Hoists—Air Compressors—Pneumatic tools—Steel Hoisting Towers, etc.

NEW HOISTS
1—Double Drum Christian W/Swinger - Buda Diesel Model 6-DC-844
1—3-Drum Clyde W/Swinger - Buda Diesel Model 6-DC-844
1—8¼ x 10 3 Drum Clyde Steam Derrick Hoist

REBUILT HOISTS
3—D.D. Lamber 8½ x 10 Pile Driving Hoists
3—D.D. National 8¼ x 10 Pile Driving Hoists
1—3 Drum American W/135 hp Hercules Gas Engines

Consult us for estimates and advice on overhauling YOUR Equipment—in our shop or at your plant by experienced mechanics under competent supervision.

SALES - REPAIRS - RENTALS

INTERNATIONAL HOIST & MACHINE COMPANY
Office—556 Ferry St., Newark 5, N. J. Plant—61 Esther St.

BOILERS
10 to 1000 H. P.
NEW-USED RECONDITIONED
Steam, Gas and Electric Power Equipment
J. PARKER THOMPSON CO., INC.
507 FIFTH AVE., NEW YORK CITY
MURRAY HILL 7-6547-8-9

For Sale at a Bargain Price

2—D8 Tractors 8R Series
1—D7 Tractor 7M Series
1—D8 Tractor 1H Series
All in good working condition, equipped with LeTourneau equipment.

1—Lima Model 750, 1¾ yd. diesel, air control, excellent condition.
1—Osgood Model 800, 1½ yd. diesel, air control, excellent condition.

TUCKAHOE CONSTRUCTION CO.
116 Columbus Avenue, Tuckahoe 7, N. Y.

TRUCK CRANE

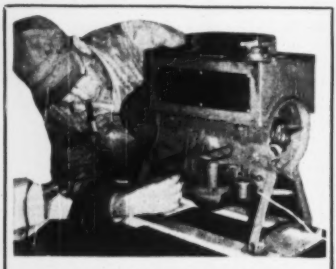
Rebuilt Northwest Model 25 Truck Crane mounted on 10-wheel Mack complete with outriggers.

SALE or RENT

HODGE & HAMMOND, INC.
1100 E. 156th Street
New York 59, N. Y.

Overhead Traveling Cranes
Structural Steel Buildings
Tanks - Conveyors

BENKART STEEL & SUPPLY COMPANY
2017 Preble Ave., Pittsburgh 12, Pa.



SPACE HEATERS
War Surplus Bargain
New-Ready To Use!
40,000 BTU capacity
—Burning gasoline, kerosene or diesel fuel
—Electric blower—12 V. DC or 110 V. AC using small transformer.

Portable, Quick, Clean Heat
Ideal for work under construction, emergency heat or auxiliary heaters.

$95.00 each

Crated in Original Export Boxes

Telephone FRanklin 2-4028

Clapp, Riley and Hall Co.
14 No. Clinton St. Chicago 7, Illinois

FOR SALE OR RENT
All Late Models

1—Allis Chalmers Tractor
1—Caterpillar Auto Patrol
5—D W 10's 3000 hrs. or less
1—Caterpillar D8 Angeldozer
1—Caterpillar D7 Bulldozer

WILLIAMS CONSTRUCTION CO.
Box 145, Middle River, Baltimore 20, Md.
Phone—Essex 1310

FOR SALE

1—Marion ¾ c.y. shovel 1942 Model 331 with Backhoe attachment complete.
1—Adams Grader, 1941 Model #303-H-371.
1—Adnun Black Top Paver—12-ft. spread Model D 226 P 3, Serial #1014.
1—Hough Payloader—Model H.L.A. International Gas Engine 60" Bucket.

All equipment recently overhauled and in first class condition, attractively priced. Further details upon request.

E. B. McGURK, INC.
P. O. Box #630, 355 Barbour Street
Hartford, Conn.
Telephone—Hartford 7-7106
S. F. Mitchell, Pur. Agent

YULCAN
PILE HAMMERS AND EXTRACTORS
NEW OR FACTORY REBUILT
FOR SALE • • • FOR RENT
327 N. BELL AVE., CHICAGO, ILL.

NEW buckets. Bargains
1 ½ cu. yd. YAUN Dragline bucket with teeth. Weight 3485 lb. $750.00
2 ½ cu. yd. YAUN $900.00
2 cu. yd. Erie Clamshell bucket, model X06. Weight 7204 lb. $1000.00
6 ½ cu. yd. HENDRIX, light wt. Like new $1500.00
Also have used ones, various sizes & Makes. Send us your inquiries on same.

Wenzel Machinery Rental & Sales Co.
2136 Jefferson Street. Kansas City, Mo.

BUCKETS: 10—Steubner 32 cu. ft., controllable, self-clearing, drop bottom. Concrete Buckets.
CARS: 10—Western and Koppel, 20 and 30 yd., air dump, standard gauge.
COMPRESSOR: Worthington 150 H.P., two stage, short belt drive, capacity 700 CFM at 100 lbs.
JAW CRUSHERS: Farrel 15-B size 24 x 36, manganese fitted, with or without motor and drive. Also, all sizes 4 x 6 to 48 x 60".
GYRATORY CRUSHERS: All sizes 8" x 30" to 42" x 134".
REDUCTION CRUSHER: Symons 5½ ft. short head, with or without motor.
DIESEL LOCOMOTIVE: Plymouth 25 ton, standard gauge, D-17000 motor, air brakes.
OET CRANES: 2—10 ton capacity, 62' span, 3 motor type, 3 phase, 60 cycle, 440 volt.
SHOVELS & DRAGLINES: 1—Bucyrus Erie 120-B, 4 yd. rock dipper, with or without dragline attachments, 2200 volt, A.C., Ward Leonard control. 1—Monighan Walker Dragline, 9W, electric, 200 ft. boom, 8 yd. bucket. 1—1201 Diesel Shovel, 3 yd. capacity.
DIESEL TRUCKS: 1947 Euclid, 22 ton, model 13TD, end dump, rock bodies, 275 H.P. Buda diesel motors.
BLAST HOLE DRILLS: 2—Bucyrus Erie 29T, diesel powered, both with 9" bits and tools and with or without Bucyrus Erie 12 T Bit Dresser with auxiliary equipment.
MINE HOISTS:
1—All steel, drum 8 ft. dia. 1⅛" rope, 64,000 lbs. single line pull, 600 FPM. 400 H.P., 2200 volt, A.C., with all control equipment.
1—600 H.P., single drum, 8' x 12', with motor 2200 volt, A.C. and controls.
1—250 H.P., single drum, 7'3" x 5', 30,000 lbs. single line pull, 750 FPM, complete.
1—150 H.P., double drum, 38" dia., 42" face, 440 volt, A.C., complete with controls.

A. J. O'NEILL
LANSDOWNE THEATRE BLDG.
LANSDOWNE, PA.
Phila. Phones: Madison 3-8300 - 3-8301

Pile Driving Equipment

Vulcan and McKiernan-Terry
Steam Pile Hammers and Extractors
Pile Driving Accessories
Drop Pile Hammers and Caps
Steel Sheet Piling

CONTRACTORS MACHINERY Co.
2637 Southwest Blvd. Kansas City 8, Mo.
Phone Valentine 4740

Scoopmobiles & Buggymobiles

NEW & USED
For Sale or Rent

HODGE & HAMMOND, INC.
1100 E. 156th Street, New York 59, N. Y.

FOR SALE

1—1½ Cu. Yd. Amsco Shovel bucket, new, complete with teeth and sheave for P & H Shovel. Price $1450.00

Phone Williams 1-8600
Hillsgrove, Rhode Island

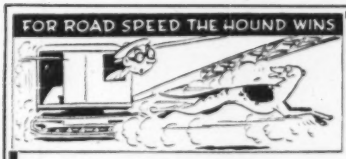
FOR SALE

International TD 18's

Unused Surplus, Bull or Angle Guaranteed as New. Priced far below new cost.

JOHN J. SHANAHAN, INC.
17 Electric Ave., Brighton 35, Mass.

FOR ROAD SPEED THE HOUND WINS



You can BUY or RENT torch type concrete heaters, hot water type, oil burning salamanders, boilers, etc. from E.C.A.

CRAWLER CRANES, DRAGLINES AND SHOVELS

1—2¼ yd. Mdl. K570 Link Belt Diesel Crawler Crane #2215, with 50-65-70 or 85' boom and 12'6" nib, high gantry, hydraulic controls, DI7000 engine. Will handle 47½ ton. Weight 148,600#
1—1¾ yd. Link Belt Model K370, Ser. No. 2247, equipped with 70' boom, powered by Cat. D13000 Diesel engine.
1—¾ yd. Lorain Model 80, No. 10750, with 65' boom, powered by Waukesha-Hesselman diesel engine.
1—1½ yd. P&H Model 655-A, combination shovel, dragline and crane, Ser. No. 6426, powered by Caterpillar Model D13000 Diesel engine. Crane boom 75', shovel front 24' boom, 18' sticks, 1½ yd. manganese dipper.
1—1⅜ yd. Link Belt Model K360, Ser. No. 1959, powered by Caterpillar D13000 Diesel engine with 65' boom. Also have back hoe attachment, boom 25' scoop arm 8'9", pull shovel mast 21'9", with 1⅛ yd. dipper.
1—1¼ yd. #5 Northwest Ser. No. 4564. Powered with 6 cyl. Wisc. Model D84 gasoline engine. With 60' boom.
1—1¼ yd. Link Belt Model K38 crawler crane, Ser. No. 1520. Powered with 4 cyl. Model WL-51 B Waukesha gasoline engine with 50' boom.
1—1 yd. Erie Gas-Air Model GA-2 combination shovel and crane, Ser. No. 10679, powered with 4 cyl. Waukesha Model WL55 gasoline engine, with 45' crane boom. Shovel boom 22', sticks 12' with 1 yd. dipper.
2—¾ yd. Koehring Model 301, Ser. Nos. 544, and 840. Powered by 4 cyl. Wisconsin Model M gasoline engines. With 40' booms.
1—¾ General Model 307, Ser. No. 2575, powered by 71 HP 8 cyl. Chrysler Industrial engine, with 40' boom.
2—¾ yd. Burkeyes, Model 70, Ser. Nos. 5409 and 5411, with 40' boom, powered by 71 HP Chrysler Industrial gasoline engines.

WE OWN 15 CRANES NOT SHOWN ON THIS LIST. SEVERAL CRANES LISTED ARE IN OUR RENTAL DEPT. ONLY.

DERRICKS

1—50 ton American Model 20-100 all steel guy derrick, Ser. No. 1184, with 115' mast, 100' boom, 16' bullwheel. Capacity 50 tons at 38' and 20 tons at 98' radius.

6—30 ton Wiley BRAND NEW stiffleg derricks, 32' mast, 60' boom, 12' bullwheel. Cap. 30 tons at 28' radius.

AIR COMPRESSORS

Portable and stationary, electric diesel & gasoline power, sizes from 2 cu. ft., 1,000 cu. ft.

TRUCK CRANE

½ yd. Universal Crane #873, with 25' boom, mtd. on 10 wheel Hendrickson pneu. tired truck.

LOCOMOTIVE CRANES

1—35 ton Ohio, Mdl. G, Ser. No. 3950, boom 50', ASME boiler, cast steel tracks, outriggers.
1—15 ton Link Belt Ser. # 678, ASME boiler, 45' boom. Bargain.

LOCOMOTIVE

1—15 ton Vulcan std. ga. locomotive, Ser. No. 3905. With special MCB couplings. Powered by 6 cyl. Lefler Mdl. 4MS gasoline engine. Equipped with 4 wheel air operated brakes with 2 cyl. Westinghouse air compressor. Complete with starter and generator.

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Cleve. Model 95 Wheel Type—$3200.00
Cleve. Model 110 Wheel Type
Buckeye Model C-15 & C-224
Parsons Model 310 Diesel—52" W. 16' D.
P & H Model 10-30 digs 32" W 12' D.—$1800.00
Cleve. combination Backfill Tamper
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Lorain L-820 Shovel, almost new
Buckeye Clipper Shovel ¾ yd. bargain
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Cat D-8 & D-7 latest series
Cat. D-4 front end loader & dozers
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SHOVEL FRONT ATTACHMENTS

Northwest Model 6
Northwest Model 25
Lorain 80 like new
Buckeye Clipper Model 70
Link-Belt LS-40
Osgood Model 200
Osgood Shovel Front
1201 Lima Standard Shovel Front
1201 Lima Hi-Lift

AIR COMPRESSOR RENTAL CO.
19615 Nottingham Road,
Cleveland 10, Ohio
Phone KEnmore 8000

FOR SALE

LOCOMOTIVES

2—Plymouth 8-ton, Std. Ga. Gas
2—Whitcomb Gas, 6 ton, 24" gauge
1—Plymouth 25 ton, Diesel, Std. Ga.
2—Vulcan 30 ton, Diesels, Std. Ga.
1—Baldwin 100 ton Diesel-Electric, Std. Ga.
1—American 100 ton, Diesel-Electric, Std. Ga.

1—Plymouth 44-ton Diesel-Electric #4347
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Both locomotives in excellent condition and attractively priced.

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2—IR 2000', 3/60/2200
2—Chi. Pneu. 1100', 3/60/220
1—IR 6000', 3/60/2200—Low pressure

DERRICKS

1—American S.L. 100 ton, 110' boom
2—American S.L. 10 ton, 75' boom
1—American 20 ton Stiff Leg—135' boom—complete with American 250 H.P. 3 Drum Gas Hoist with Swinger
1—Ingram, 4 ton S.L. 50' boom. New.

CARS

28—Western 20 yd. Air dump

CRANES

5—Late Model Steam Loco. Cranes—25-30-35-ton, oil fired. American and Ohio.
1—Browning, No. 8, 20 tons, oil fired.
1—Bucyrus-Erie Diesel 48-B C & D—100' boom—#12411
1—American Type 500—3 yd—100' boom—Gas—#GS—272. Rare Bargain.

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Phone Sagamore 2-7132

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7 Coolers
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65 Motors 1½ HP to 250 HP
65 Pumps
3 Air Motors
15 Reducers
9 Repulpers
34 Motor Starters 2 HP to 40 HP
12 Vacuum Receivers
7 Recuperators 10' dia. x 14' 11"
2 Bucket Carriers

Also many other items. Complete listing available in the immediate future.

EQUIPMENT INSTALLED BUT NEVER USED

MILL & QUARRY EQUIPMENT CO.

Baton Rouge P. O. Box 1486 **Louisiana**

IOWA Portable Crushing Plant, 32" x 40" RB, with apron feeder 12 ft., Murphy Diesel, underconveyor. Mounted on rubber, tandem trucks. New 1948. Might rent.

UNIVERSAL 20" x 36" RB. Portable Crushing plant. Apron feeder, Buda Diesel, undercenveyor. Mounted on rubber, tandem trucks. A1. $10,000.00.

MANITOWOC model #3500, 2½ cu. yd. shovel-dragline. New 1947. $22,500.00.

BUCYRUS-ERIE 54-B, 2½ cu. yd. shovel-dragline. New 1947. $32,500.00.

CAT-DW-10 with 10 cu. yd. LaPlante Choate Scraper, hydr. Used 2860 hours. Overhauled. $5000.00.

CAT. #66 Pull Blade, hydraulic. 12 ft. $1500.00.

T-9 with Trackson Swing Crane & Dozer. Like new. $3000.00.

CONCRETE BUCKETS, 1 cu. yd. A1. $125.00 each.

SCHRAMM 310 cu. ft. Diesel Portable Compressor. New guarantee. $3250.00.

PH-855 1½ 100 ft. Dragline, Caterpillar Diesel. Only used for erecting new refinery. Guaranteed like new. $23,000.00.

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2136 Jefferson Street
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1—50' Link Belt Crane Boom. New
1—½ yd. Insley K12 Crane.
1—¾ yd. Koehring 304 Crane
1—80D Northwest-Diesel S. & C.
1—1¾ yd. Manitowoc 3000A Shovel & Dragline
2—10-ton American Terry all steel Stiff Leg Derricks
1—25-Ton Ind. Diesel Loco Crane Model 5
1—30-ton Browning Steam Loco Crane 1944
1—30-ton Plymouth Std. Go. gas. Loco. 1943
1—44-ton G.E. Diesel Elec. Loco

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Rittenhouse 6-2311

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New Adams 512 Tandem diesel motor grader with canopy top and enclosures, 12' moldboard and V type Scarifier.

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Bridge Gratings For Sale, 30,000 sq. ft. Excellent for replacing old wooden decking. In sections 8' x 26', main carrying bars ¼" x 2¾".

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34-60 32nd Street, Long Island City 6, N. Y.

FOR SALE

1—Euclid Loader, Model BV-3, 54" Loading belt, year 1947. Asking $12,000.
6—Euclid bottom dump 13 c.y. 190 HP, GMC motor, year 1947. Asking $9,500 each.
4—Super "C" Tournapulls with LP Scrapers, 15 c.y. Serial C3T4300 to 3T5200. Asking $6,800 each.
2—Model "C" Tournapulls with LS scrapers, 12 c.y. Serial C3T4300. Asking $5,000 each.
3—Super "C" Tournapulls with W210 tournatrailers, 13 c.y. Asking $6800 each

All this equipment in A-1 condition. Rubber practically new.

FS-1948, Engineering News-Record
330 West 42nd St., New York 18, N. Y.

FOR SALE

One 6 cylinder MacIntosh-Seymour (now American Locomotive Co.) Diesel Engine, Serial #2005, Model 6-C-46, 4-cycle, 1250 H.P. at 164 R.P.M., direct connected to G. E. 2300 Volt, A.C., 2-phase, 60-cycle 1060 K.V.A. generator and G.E. direct connected exciter complete with generator field rheostat, exciter field rheostat, lube oil pump and motor, and complete with necessary wattmour, ampere, voltage, power factor meters and necessary current and potential transformers.

May be inspected in operation at Municipal Generating Station, Rockville, Centre, N. Y., anytime prior to February 10, 1950. Will be sold "as is, where is", purchaser to remove prior to March 15, 1950.

Offers will be received to 2:00 P. M. February 10, 1950, by the **Commissioner of Public Utilities, Rockville Centre, N. Y.** Write for further information.

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IR Type 1—1⅛", 1⅞", 2⅛", 2¼" and 2⅝"
IR Type—2—1⅞"
Timken Type "H"—1¾" and 2⅛"
All center hole, four point.

Offered at less than manufacturers selling price.

FS-1533, Engineering News-Record
330 West 42nd St., New York 18, N. Y.

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Four surplus 21-S and 28-S skid mounted concrete mixers.

White Construction Co., Inc.
95 Madison Ave., New York 16, N. Y.

FOR SALE

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Shovel, Cat. D13000 Engine
Excellent Condition

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1946 NORTHWEST Backhoe

Model 25—¾ Cu. Yd. Diesel
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Price—$10,000.00

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3200 Pieces
⅛"x15½"x120"
Weight per unit 65#

Sold in separate units or total lot
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LATE 1947 MODEL E

QUICKWAY TRUCK CRANE

With Fairleads and Bucket; mounted on Autocar Truck; cost new over $13,000. Sacrifice $5500.

GARSON
Box 86, Norfolk, Va., Phone: 27570.

WANTED

(Additional Wanted Ads on Page 114)

For Sale or Rent

1—Steam Powered FLOATING CRANE, 85' Boom, 10' extension, 16' Dia. Turntable, Code Boiler 60" Dia. 12' High, 125 # W.P. 3 Drum 9"x10" Hoist, Gear Swing Wiley Whirley, Mounted on wood barge 28' 6" x 80'. Boiler just retubed. Will sell without Barge. Location Havre de Grace Chesapeake Bay. Contact

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Stationary Hot-Mix Asphalt Plant

Approx. 500 cu. ft. late model Stationary Air Compressor with or without electric power. 30" Belt Conveyor, 125 ft. up. 20" x 36" or larger RB. Jaw Crusher 8" x 24" to 36" R.B. Jaw Crusher.

R. H. THOMASON, Hickman Mills, Mo.

FOR SALE

STRAYER CONCRETE PLANT

¾ C. Y. Portable Concrete Mixing Plant, Completely Hydraulic Controlled, 40 HP Gas Engine, Self Contained Storage Bins, Loading Elevator, Receiving Hopper, Batching Scales, Water Control Batch Charger and Mixing Timer Mounted on Pneumatic Dual Tired Wheels.
Easy to move. Three years old. Now in operation.

JAMES J. WATERS CORPORATION
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Cedar Rapids Speedline Model
$7500.00

FS-1874, Engineering News-Record
330 W. 42nd Street, New York 18, N. Y.

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Ingersoll-Rand 8 x 6, T 20, 220 cu. ft. COMPRESSOR for replacement parts.

N1 and N2 CEMENT GUN. Good Running order.

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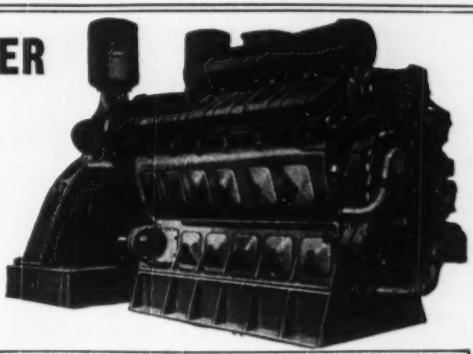

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UNIT CAPACITIES—10 TO 1875 KVA
A.C.—50 AND 60 CYCLES
ANY VOLTAGE

A PARTIAL LIST OF OUR INVENTORY

KVA	MAKE	MODEL	HP	RPM	KVA	MAKE	MODEL	HP	RPM
1875	Fairbanks Morse	33E16	2000	300	330	Superior	KNA	396	514
1420	Fairbanks Morse	38D8 1/8	1600	720	312.5	General Motors	8-268A	450	1200
1250	General Motors	16-278A	1600	720	312.5	Clark	MD-4	375	327
937.5	General Motors	12-567	1080	720	200	Buckeye	80	240	600
625	Alco	6-12 1/2-13T	750	600	187	Ingersoll Rand	S	225	514
475	Baldwin	VO-6	585	514	125	General Motors	3-268A	150	1200
375	Enterprise	DSG-6	450	450	75	General Motors	6-71	90	1200

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LATE MODELS

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LORAIN 80 Diesel 1-¼ cy Shovel & Dragline/Crane.
BULLDOZERS hydr. & cable — Caterpillar D-7, International TD-18, International TD-14
DRAGLINE BUCKETS, 1 cy & 2 cy, new
All late models fully covered.

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Factory New Barnes Centrifugal Pump
Sizes 1½" to 6" and
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Immediate delivery

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New and Used with Equipment As Listed

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5 Earth Boring Machines, Highway Model HD, mounted and ready for work
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5 Highway Double Drum Winches with two Way Power Take Off Installed
5 Truck Bodies fully designed for Line Construction work
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PRICE FOR EACH UNIT..$5,750

SLIGHTLY USED

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A TREMENDOUS SAVINGS AT..$7,800

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4 Model K Jaques Machines. Priced to sell quick. These machines are available as result of building own machines, the NEW "STERLING" Model "A". Ask for a demonstration: Check with our owners as to responsibility and type service we offer!

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FOR SALE or RENT

100 KW
DIESEL ENGINE GENERATOR SETS

10—100 kw., 120/240 v. D.C. Delco Generators dir. con. to 150 HP Model GBD-8, 5½x7, 8 cyl. Superior DIESEL Engines, elec. start with engine panels
4—100 KW same as above with 220 or 440 v. NEW A.C. Generators
1—63 kva. 120/208 v. 3 ph. 60 cy. 1800 rpm., driven by Caterpillar DIESEL mt'd on trailer
2—75 kva. 220/440 v. 3 ph. 60 cy. Delco Cummins DIESEL
2—37½ kva., 220/440 v. 3 ph. 60 cy. Buda DIESEL
10—NEW 37½ kva., 220/440 v. 3 ph. 60 cy. LeRoi Gasoline
1—31.3 kva. 120/208 v. 3 ph. 60 cy. G.E. Gen. driven by LeRoi GASOLINE
11—NEW 25 kva. 120/220 v. 1 ph. 60 cy. Le Roi GASOLINE
1—12½ kva. 120/240 v. 1 ph. 60 cy. 1200 rpm., dir. con. Hercules GASOLINE
4—12½ kva. 120/240 v. 1 ph. 60 cy. dir. con. LeRoi Gasoline Engines
1—7½ kva. 120 v. 3 ph. 60 cy. Wisconsin GASOLINE
6—3 kva. 110/220 v. 1 or 3 ph. Hercules GASOLINE

PORTABLE AIR COMPRESSORS

1—315 cfm Ing. Rand air cooled 2 stage, 100# powered by Waukesha DIESEL Engine with air receiver mtd on 4 steel wheels with towing tongue.
1—105 cfm Ing. Rand 4x5 GASOLINE mtd on trailer with gas and air tanks.
2—105 cfm 100# Penna driven by Buda GASOLINE Engines.

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We rent transits and levels on a monthly or yearly basis. Reasonable rates. All instruments are fully guaranteed in first class working order.

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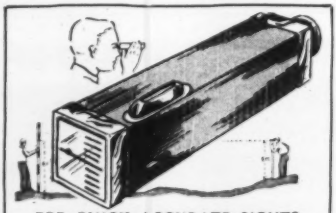

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THE OLDEST EQUIP. HOUSE IN PHILA.

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CIRCULAR GRADUATING at New Higher Accuracies is Now Available - quickly, Economically - with our new circular graduating engine. *Ask for Prices.*

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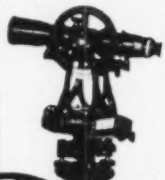

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Replace your platinum wire or spider web reticle with the new Gurley glass reticle. Metallic filaments deposited on Gurley glass reticles are sharply defined—equally visible against either very bright or dark backgrounds.

Patterns to suit every surveying need.

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Fulton St. Station Plaza, Troy, N. Y.

WANTED

(Additional Wanted Ads on page 112)

TRANSITS AND LEVELS

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Sale or Rent

Headquarters for REPAIRS — any make — Factory Service. We will also buy your old instruments or take them in trade. A complete line of Engineering Instruments and Equipment for field or office. Write for catalog N.R. 01.

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OFFICIAL PROPOSALS

OFFICIAL PROPOSALS

Bids: February 15, 1950 (506)

Construction of a Sewage Treatment Plant and the Main Pumping Station

Town of Phillipsburg
Warren County, New Jersey

Sealed proposals will be received by the Mayor and Board of Commissioners of the Town of Phillipsburg, at the Town Hall, Phillipsburg, Warren County, New Jersey at two o'clock P.M. on the Fifteenth day of February, 1950, for the Construction of a SEWAGE TREATMENT PLANT and the MAIN PUMPING STATION embracing the following contracts:

Contract No. 7—General Construction
Contract No. 8—Structural Steel & Miscellaneous Metal
Contract No. 9—Mechanical Equipment
Contract No. 10—Plumbing & Gas Fitting
Contract No. 11—Heating
Contract No. 12—Ventilating
Contract No. 13—Electrical

at which time and place they will be publicly opened and read.

Copies of drawings, specifications and other contract documents are on file and open to public inspection at the office of the Town Clerk, Phillipsburg, New Jersey and at the office of the Engineers, William A. Goff, Inc., Broad Street Station Building, Philadelphia 3, Pa.

Complete sets of such documents, covering seven contracts, may be obtained from the Engineers upon payment of $30.00 for each set. If documents are returned in good condition within ten days after opening of bids, $15.00 for each set will be refunded. If documents are not returned within time stated, the entire payment will be forfeited.

The right to waive any informality in any bid, to accept any bid, to reject any or all bids, or to award as deemed to the best interest of the Town is reserved by the Mayor and Board of Commissioners.

No bid may be withdrawn within thirty (30) days after the scheduled closing time for receipt of bids.

Each proposal shall be accompanied by security in an amount of not less than five (5) percent of the total bid or bids, in the form and subject to the conditions provided in the Instruction to Bidders.

TOWN OF PHILLIPSBURG
Harvey G. Wismer
Town Clerk

U. S. Government

UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. 2885) will be received by Bureau of Reclamation, Davis Dam, Nevada, until February 9, 1950, and then publicly opened for furnishing labor and materials and performing all work for the completion of utility building, parking area, and forebay channel bridge.

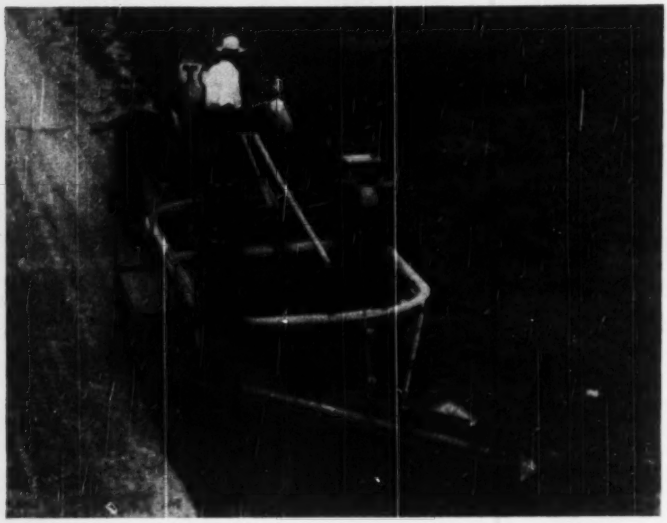
U. S. Government

The work is situated along the Colorado River approximately 30 miles west of Kingman, Arizona. Principal items are approximately: 320 cu. yds. excavation; 1,750 cu. yds. gravel surfacing; 175 cu. yds. concrete in parking areas; constructing reinforced-concrete utility building; and other work. Time allowed for completion will be 150 days. For particulars, address Bureau of Reclamation, Davis Dam, Nevada; or Building I-A, Denver Federal Center, Denver, Colorado. MICHAEL W. STRAUS, Commissioner. (503)

UNITED STATES DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. 2889) will be received by Bureau of Reclamation, Phoenix, Arizona, February 14, 1950, and then publicly opened for furnishing labor and materials and performing all work for the construction of Mesa substation, Davis Dam Project, Arizona-Nevada. The work is situated approximately 1 mile east of Mesa, Arizona. Principal items are approximately: concrete, 2,000 cu. yds.; erecting 400,000 lbs. steel structures; installing 1,650,000 lbs. electrical equipment; and other work. The work is divided into 2 schedules. Time allowed for completion will be 340 days. For particulars, address Bureau of Reclamation, Aviola Building, Phoenix, Arizona; or Building I-A, Denver Federal Center, Denver, Colorado.

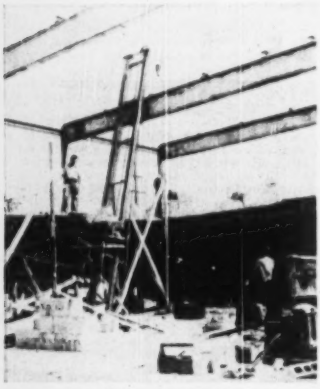
MICHAEL W. STRAUS, Commissioner. (504)

NEW PRODUCTS



Road Shoulder Maintainer Has An Automatic Windrow Eliminator

Hydraulic road tool, designed specifically for maintenance of shoulders, features a patented, automatic windrow eliminator on the rear moldboard. Front moldboard cuts, blades, and rolls material inward, cutting high spots and filling depressions. It reaches to the outer edge of the shoulder. Side and transfer moldboards, running parallel to the concrete slab, deliver excess material to a rear spreading moldboard, which is positioned at an angle opposite to that of the forward unit. This rear board distributes remaining material evenly and free of windrows. Controls are hydraulic through a self-contained system. Blade angles may be set as required; down-pressure is applied as necessary. Available in 8, 10, 12, and 14-ft. sizes.—Lull Mfg. Co., 3612 E. 44th St., Minneapolis 6, Minn.



Inclined Elevating Track

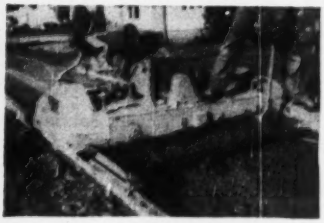
Incline-Track is designed to simplify the problem of elevating materials to workmen. Manufacturer supplies platform carrier and reeving pulleys; contractor builds track to desired length, using parts furnished and regular lumber. Pulley arrangement provides a double line so that pull at hoist does not exceed 400 lb. The Incline-Track can be used to hoist up to 1,000 lb. of material.—King Mfg. Corp., 3146 W. Chicago Ave., Chicago 22, Ill.

Waterproofing Materials

Transparent crystal-clear Dashide is designed to waterproof above-grade concrete, brick, and masonry; Dasquik is a purple liquid for sealing below-grade leaks where there is a great pressure. Feature claimed for Dashide is that it contains no wax, gum, silica, stearates, chloride, gasoline, benzine, naphtha, kerosene, derivatives, ortho silicas, silicons, or similar materials; Dasquik contains no ammonium stearates, calcium or thanium chlorides, or metallics.—The Dasco Co., Inc., 1602 Thames St., Baltimore 31, Md.

Payroll-Deduction Computer

Figure-Mated payroll tax computer lists amount of withholding tax to be deducted, according to exemptions claimed, and also, the 1950 Social Security tax. This computer shows the proper figures in one simple operation. Finger-tip-controlled cylinders are available for any payroll period.—Rapid Office Devices, Inc., Dept. 80, 55 E. Washington St., Chicago 2, Ill.



Gutter, Curb, Sidewalk Paver

Self propelled curb and gutter paver is now adaptable to integral gutter, curb, and sidewalk paving. Adaptation is made by extending the machine to the desired width and using extensions on each side of the engine. Screed and trowel are available for a large variety of conditions. Paver is designed to meet the trend toward having sidewalks right against the curb.—Dotmar Industries, Inc., 500 Hanselman Bldg., Kalamazoo 1, Mich.

Whiteprinting Machine

Automatic whiteprinter produces ammonia-vapor prints at speeds to 32 fpm. The Pacemaker accommodates all types and sizes of diazo materials to 42 in. wide. A push-button master switch controls all electric motors and heaters, instantaneously starting or stopping the entire mechanism. A sliding-revolving-contact feature enables operator to select either sliding-revolving or straight-revolving contact. The Pacemaker is 6 feet 6 in. wide, 7 ft. tall, 4 ft. 5¼ in. deep, and weighs 2,500 lb.—The C. F. Pease Co., 2601 W. Irving Park, Chicago, Ill.

Diesel Starter Fluid

Available in gelatin capsules and cans, a new diesel starter fluid is de-

(Continued on page 122)

MARION 362

All-Purpose 1-½ Cu. Yd. machine with a

PROVEN RECORD

of outstanding performance

SOME MARION 362 FEATURES

VERSATILE—Easily convertible front-end equipment for shovel, dragline, clamshell, crane, pull shovel, drop ball and grapple service. Conversions made quickly in field. No machinery changes except for drum laggings and sprockets.

SMOOTH CLUTCHES—Smooth, positive clutch action over the years. Swing, propel and crowd retract clutches never require adjustment; hoist and crowd-out clutches have only one adjustment.

MARION AIR CONTROL—Compensating-type air control valves yield full machine power when 12 pounds of pressure is applied to control levers. No production lag because of operator fatigue. Air control eliminates levers, bell crank, toggles, pins, etc.

ANTI-FRICTION BEARINGS — 16 ball or roller bearings cover all principal friction points, resulting in greater operating economy, machine efficiency and fewer replacements.

SIMPLE, HEAVY-DUTY DESIGN — Only two horizontal shafts on machinery deck. Only 16 gears aside from front end equipment. Gears heat treated. Shafting of alloy steel. Main frame all welded for life-long perfect alignment.

MARION

POWER SHOVEL COMPANY

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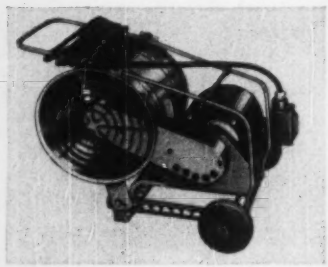
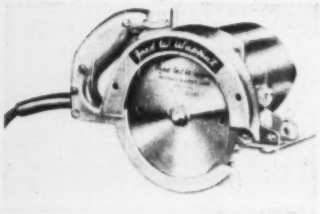
signed to eliminate the use of heaters and electric boosters. Where mechanism for priming is mounted on the dashboard, the fluid in capsule form is most desirable as it enables the operator to start engine without the help of a second person injecting priming fuel into the engine.—Sinclair Refining Co., 630 Fifth Ave., New York, N. Y.



Portable Ventilators

Work in high temperature and noxious atmospheres is made safer and more comfortable by use of these portable ventilators. Equipped with high-velocity fans, the MSA ventilators can be powered by either gasoline or electricity. Standard equipment includes 16 ft. of 14-in.-dia. canvas duct. Two-way air-flow feature permits duct to be connected to either the inlet or discharge side of the fan allowing dust or noxious gases to be drawn from the area, and fresh ventilating and cooling air supplied.—Mine Safety Appliances Co., Braddock, Thomas & Meade Sts., Pittsburgh 8, Pa.



Lightweight Hand Saw

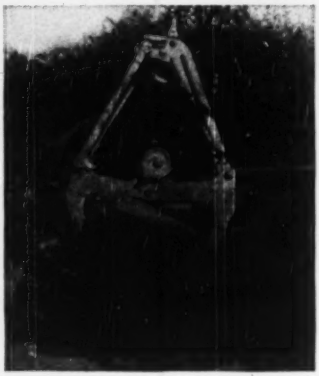
The Maxaw lightweight electric hand saw has a 6½-in. blade and cuts to a full 2-in. depth on square cuts, and cuts 2-in. dressed lumber at a 45-deg. angle. Depth adjustment, built-in as an integral part of the saw, is from ⅞ to 2 in. Bevel adjustment is from 0 to 45 deg. Trigger-type switch may be locked when necessary.—Fred W. Wappat, Inc., Mayville, N. Y.

Rafter-Computing Dial

One setting of the rafter dial provides information on lengths and angles for ten types of rafters. It is a flat instrument measuring 6¼x8¼ in. and can be used to determine sizes for roofs with any pitch from 14 to 57 deg., in addition to standard pitches. Also supplied with the rafter dial is a booklet on "Quick Tricks in Roof Design", and a job sheet for recording all measurements for the roof. —Edward Weyer, 40 W. 779 St., New York 24, N. Y.

Chemical-Resistant Paint

Ucilon 1701 is a chlorinated-rubber paint for use where a protective coating is desired against acid and alkali fumes, moisture, vapors, grease, and oils. It is recommended for floors, exteriors of storage tanks, structural steel, and machinery and equipment. It can be applied over old paint without priming or sandblasting. Coverage is between 350 and 500 sq. ft. per gal.—United Chromium, Inc., 51 E. 42nd St., New York 17, N. Y.



Five-Ton Stone Grab

Designed for hard service, this 5-ton stone grab has a 4-ft. 6-in. spread. Made of high-strength steel, it is welded into one-piece construction at points of shock and wear. The grab is designed to bite deep and hold fast. It weighs 2,200 lb. and is safely handled on a ¾-yd. crawler crane.—The Wellman Engineering Co., 7000 Central, Cleveland 4, Ohio.

Safety-Tread Flooring

Perma-Tread is a heavy-gage cast-aluminum plate which has a fine silica-carbide grit material distributed through the casting and permanently bonded into its surface. It is available in various sizes to a maximum of 6-ft. continuous length and 1-ft. widths in thicknesses of ¼, ⅜, and ½ in. Countersinks or special mounting may be included in the mold.—Mold-Cast Alloy Corp., 2140-A Montcalm St., Indianapolis, Ind.

Flush Veneer Door

Weldwood flush veneer door features a solid-lumber staved core. It comes in a wide range of sizes and in the popular species of hardwood face veneers. The core is made of kiln-dried basswood lumber laid on edge in staved construction. United States Plywood Corp., 55 W. 44th St., New York 18, N. Y.

Self-Priming Jetting Pump

Pump, primed by engine exhaust, delivers up to 400 gpm. at 150-lb. pressure. Recommended for pile-driving jetting jobs, it can also be used for fire fighting, bank washing, caisson work, watering down fills and pavements, and mud pumping during drilling operations. These pumps are available in single-stage and multi-stage models in a wide range of styles and sizes to serve many pumping requirements. — Sterling Machinery Corp., 405 Southwest Blvd., Kansas City 8, Mo.

Twin-Cartridge Respirators

Protection against seven respiratory hazards in one respirator is provided by use of a basic face piece and seven interchangeable filters. Face piece is molded from durable rubber and features a rolled edge that curves inward to give a snug fit without leakage. Other features include a flexible fitting brace for shaping to individual facial contours, highly efficient inhalation and exhalation system, and increased field of vision through thinner filter cartridges.—American Optical Co., Southbridge, Mass.

Improved, Executive Airplane

Short take-off run and higher power ratings are among the features of the 1950 Navions. The Super Ryan Navion cruises at 170 mph., climbs 1,250 fpm with full load, and is powered by a 260-hp Lycoming engine. Take-off distance for the Super "260" is 400 ft; to clear a 50-ft obstacle, 770 ft. In approaching over a 50-ft obstacle, 875 ft is needed to the end of the landing roll. Ground roll is 470 ft. Normal range is 640 miles, and when cruised at maximum economy conditions, range

can be increased to 900 miles. Outward appearance is similar to deluxe "205" except for a 3-in. longer nose, slightly different cowling lines, and larger propeller. The Ryan Navion has a low-wing and tricycle landing gear.—Ryan Aeronautical Co., Lindbergh Field, San Diego 12, Calif.

Rubber Pinch Valve

Non-corrosive and non-clogging valve is recommended for use in pipe lines handling corrosive liquids, semi-solids, and dry granular materials. Its use is applicable to any line except where the material being transported is damaging to rubber or where high temperatures are involved. It is composed of three parts—rubber tube, pinching mechanism, and housing. Advantages claimed include: closes easily and positively because the rubber compresses around any coarse particles, and provides excellent control. —Ray Wilcox Co., 1436 Land Title Bldg., Philadelphia 10, Pa.

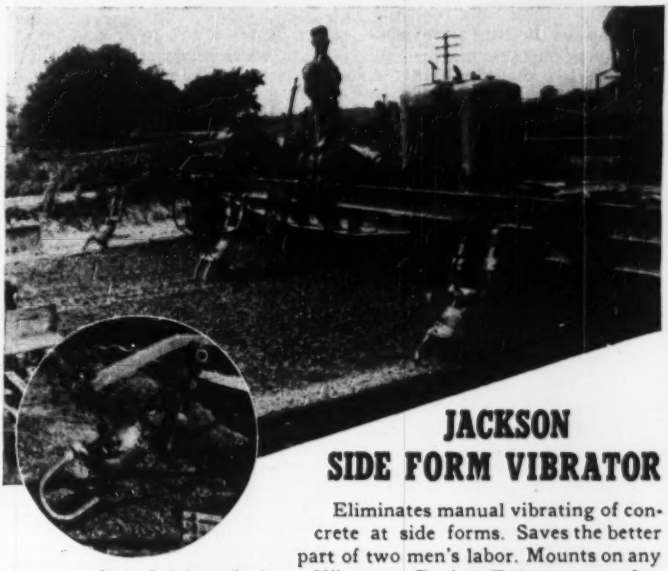
Plaster and Mortar Mixer

Tip-over-type plaster and mortar mixer has a capacity of 10 cu. ft. The mixing drum is 37-ft. long and has a 36-in. dia. Mixing blades give an end-to-end action. Features include: Power tilt, 18.7-hp. gasoline engine power unit, double roller chains and machine-cut gears in transmission to mixing paddles.—Mueller Machinery Co., Inc., Metuchen, N. J.

Bucket Elevator

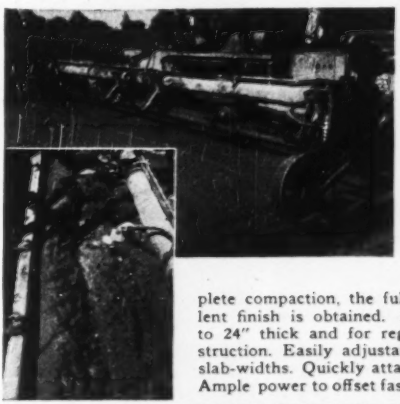
Totally enclosed bucket elevator is adaptable to use with 3-compartment bin batcher. Controlled from ground level, the elevator has a 40-ton hr. capacity; a 1-yd. hopper capacity; and is powered by a 5-hp. electric motor or gas engine.—Construction Machinery Sales Co., Waterloo, Iowa.

STEP UP YOUR PAVING PROFITS!



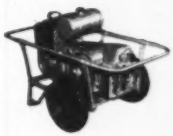
JACKSON SIDE FORM VIBRATOR

Eliminates manual vibrating of concrete at side forms. Saves the better part of two men's labor. Mounts on any modern finisher, Jackson Vibratory Paving Tube or spreader. Employs two or more vibratory units that are simultaneously lowered into or raised from the concrete by the finisher operator. Units operate close to forms or reinforcement without fouling — ride over any obstruction encountered. Will not penetrate into sub-base. Assures thorough compaction regardless of speed of finisher or spreader — no spots missed. Long-wearing, trouble-free.*



JACKSON VIBRATORY PAVING TUBE

Quickly makes plastic the stiff, drier concrete mixes which effect up to 10% cement savings. Concrete at forms or joints is, under most conditions, puddled perfectly, thus saving manual vibrating. Reduces spreading cost, steps up finisher progress. Complete compaction, the full width of the slab, and excellent finish is obtained. Perfectly adaptable to slabs 6" to 24" thick and for regular single or two-course construction. Easily adjustable in the field from 10' to 25' slab-widths. Quickly attachable to any standard finisher. Ample power to offset fast drying and setting conditions.*



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MANUFACTURERS' PUBLICATIONS

Double-Impeller Breakers—Five models of double-impeller breakers are described in 16-p. Bulletin 100A1. A 4-p. section is devoted to a description of the principle of dual impact action; cutaway drawings show how stone is reduced by impact in suspension with twin whirling impellers inside the breaking chamber; photographs illustrate each of the five models; and another section shows the units installed as skid-mounted units and as part of one and two-unit semi-portable and portable crushing and screening plants. —New Holland Mfg. Co., Mountville, Pa.

Diaphragm Motor Valves—Increased accuracy in control of diaphragm motor valves is offered by pressure controller described in (8 pp.) Bulletin 150. Recommended service of the No. 1500 Pilot includes pressure reducing, back pressure, pressure relief, vacuum, vacuum relief, pump governor regulation, and boiler-fuel governor. Bulletin describes construction of the unit, operating pressures, spiral spring, air relay, linkage, controls, and other component parts.—McAlear Mfg. Co., 1901 South Western Ave., Chicago 8, Ill.

Platform Step for Ladders—Data sheet describes E-Z tread platform step for extension ladders and how these treads help eliminate fatigue and overstained muscles, provide better balance and increased safety, and other advantages said to accrue through their use. Lists strengths, ladders they will fit, and how they are attached.—J. E. McKinley Co., 549 Crescent Ave., Glenside, Pa.

Asphalt Hard-Boards — All-purpose building board is described in 4-p. folder. Uses for Sealtight boards include: As backer boards for roll brick or asbestos siding applications; under concrete slabs as a puncture-proof vapor seal; flooring underlayment for linoleum, asphalt tile, or rubber tile; and as a knee wall for blow-in insulation jobs. Folder lists complete specifications including tensile strength, resistance to various chemicals and heat, and other physical characteristics. —W. R. Meadows, Inc., 2-8 Kimball St., Elgin, Ill.

Snow-Removal Equipment — Bulletin 4911 (8 pp.) describes the Adams line of rotary snow plows; Bulletin 4912 (4 pp.) describes the Adams line of snow plows and snow wings. The rotary is designed as a front-end attachment for any current Adams heavy-duty motor grader. It cuts a 9 ft. path. A revolving rake, which breaks up snow ahead of the plow, may be raised to a height of 8 ft. to cut down deep drifts. Bulletin 4911 features a description of the advantages of the motor-grader, rotary-snow-plow combination. Bulletin 4912 features a description of the Adams No. 6 V-type plow, also for use with the Adams motor graders. The snow wing is designed for cut-widening operations and sloping snow banks.—J. D. Adams Mfg. Co., Indianapolis 6, Ind.

Thermal Insulation—"Simplified Physics of Thermal Insulation" is available in a revised edition. The book is replete with facts about heat transfer, vapor and vapor flow, condensation radiant heating, and other information pertinent to the subject of insulation and insulation values. Of textbook scope, the book is written in down-to-earth language. It is profusely illustrated with photographs, charts, and diagrams.—Infra Insulation, Inc., 10 Murray St., New York 7, N. Y.

Mechanical Vibrating Conveyor—Features of MV vibrator, listed in detail in Bulletin 826, include use of balanced or tuned vibration, isolation of vibration, flexibility of design, positive conveyability, and handles many types of materials. Bulletin contains a detailed description of the construction and operation of the Model MV.—The Jeffrey Mfg. Co., 923 N. Fourth St., Columbus 16, Ohio.

Universal Electric Tools—Complete line of Thor universal electric portable power tools is described in Catalog E-2. This new catalog gives complete data, including prices, of all the Thor tools. Also described in this catalog are the new Silver Line tools.—Independent Pneumatic Tool Co., 175 State St., Aurora, Ill.

Acid-Resistant Coating—Plastic formula for protecting floors from the effects of acids is described in a new folder. Stoncote is a protective coating that can be applied by brush or spray to all maintenance areas where corrosion is a special problem. It can be applied to concrete, steel, and other materials.—Stonhard Co., Dept. ENR, 1306 Spring Garden St., Philadelphia 23, Pa.

Lubrication Guide — Recommended lubricants for trucks, tractors, and road-construction equipment are indicated in a 14-p. catalog. This catalog describes in detail the properties of nine different Motul lubricants and gives accurate recommendations for their most efficient use.—Swan-Finch Oil Corp., 30 Rockefeller Plaza, New York, N. Y.

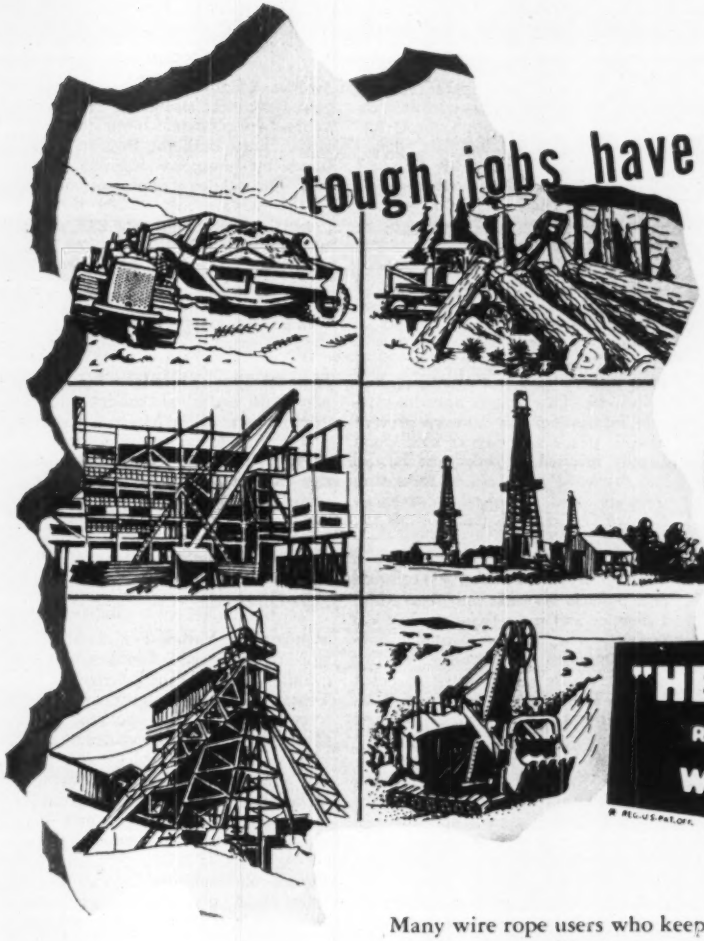
Welding Products Selector Chart — Selector and comparison chart of hard-facing rods and electrodes lists each of Amsco's welding rods and electrodes and indicates the type of service for which each is designed. Metallurgical and physical descriptions of each rod are arranged so as to simplify selection of the right rod for the right job. For comparison purposes, competitive rods which are the closest equivalents for the service noted—but not necessarily of the same composition or permanence as Amsco rods—are also listed. — American Brake Shoe Co., American Manganese Steel Division, 230 Park Ave., New York 17, N. Y.

Cleaning Pipe Prior to Coating—Equipment for cleaning both new pipe and pipe that is being reconditioned prior to coating operations is described in Industry Report No. 534. The airless Wheelabrator hurls a metallic abrasive which scours away foreign material, and leaves a slightly roughened, thoroughly clean surface to assure the best possible bond between pipe and coating material. Bulletin is replete with photographs of various installations.—American Wheelabrator & Equipment Corp., 555 S. Byrkit St., Mishawaka, Ind.

Fasteners for Earth-Moving Equipment—Ten-page booklet describes sixteen basic types of fasteners for earth-moving and heavy-construction equipment. They include high-carbon lock nuts and cap screws, wire rope clips, cotter pins made of five different metals, tractor and machine bolts, and special grades of bolts and studs for use in the manufacture of engines.—Lamson & Sessions Co., 1978 W. 85th St., Cleveland, Ohio.

Bulldozers, Scrapers, Motor Graders—Three new bulletins released by Caterpillar are devoted to discussions of the features and applications of bulldozers, motor graders, and scrapers. Form 12172 (16 pp.) lists a variety of bulldozer applications ranging from pushing 4-ton boulders to feeding conveyors. It is entitled, "What Caterpillar Bulldozers Can Do for You". Form 11960 (32 pp.) describes the use of diesel motor graders for road ditching, scarifying, bank shaping, snow plowing, oil mixing, or general road maintenance. Entitled "Caterpillar

(Continued on page 126)



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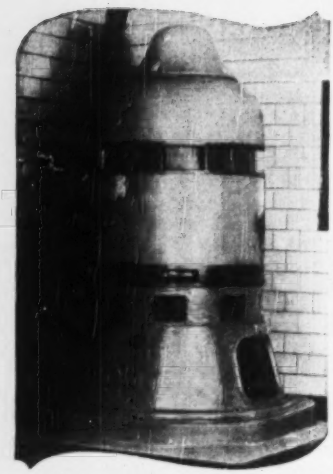

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Diesel Motor Graders", it stresses such features as the rear-mounted engine, rigid rear axle, power controls, power, and low-pressure tires. Form 12480 (16 pp.) entitled "Caterpillar Scrapers Are Profit Makers" offers pertinent information on scaper applications featuring easy loading, big tires, dozer-type ejection, high apron lift, low center of gravity, open-top bowl, and low maintenance costs. Another bulletin, Form 12479, discusses "Bucking Snow Costs." It provides first hand data and photographs on practical and low-cost snow removing using diesel-powered equipment.—CATERPILLAR TRACTOR CO., PEORIA 8, ILL.

Wood Preservative—Protecting wood from insect attack is discussed in Bulletin T-49. This 6-pager provides valuable information on how to prevent termite attack and how to save wood already infested. Powder-post beetles and dry-wood termites and their control are also discussed.—CHAPMAN CHEMICAL CO., 770 DERMON BLDG., MEMPHIS 3, TENN.

Snow-Thawing Powder — Technical data bulletin discusses the use of Melt, a new ice and snow thawing chemical powder. The bulletin contains complete application directions for this product which is distributed in pellet form.—THE CHEM INDUSTRIAL CO., 1114 HIPPODROME BLDG., CLEVELAND 14, OHIO.

Forced-Warm-Air Radiant-Heating System—Thirty-two page booklet describes system of radiant heating using forced warm air. Booklet 237 contains complete information on design computations, specifications, floor plans, and construction details. Sample installations are completely described.—CLAY PRODUCTS ASSN., 100 N. LA SALLE ST., CHICAGO 2, ILL.

Gasoline, Electric Hoists — Clyde Frame-3 hoists with gasoline or electric drive are described in 4-p. folder. Data presented cover hp. ratings, single line pull, line speed, drum size, flange diameter, and weight. Both types of hoists are available in single or double-drum models.—CLYDE IRON WORKS, INC., DULUTH 1, MINN.

Deaeration in Feedwater Chemistry—Revised publication entitled "Cochrane Deaerators" combines latest information on importance of deaeration to feedwater chemistry. This 35-p. publication (No. 3005) includes a comprehensive study of deaeration principles and is profusely illustrated with diagrams and photographs of deaerators in use. It also contains an informative article on "The Role of Alkalinity in Preventing Corrosion".—COCHRANE CORP., 17TH ST. & ALLEGHENY AVE., PHILADELPHIA 32, PA.

Air-Placed Concrete—New uses for air-placed concrete using the Bondactor method are presented in an illustrated 8-p. catalog. Both the Bondactor and Bondactor Junior are described in detail. The catalog contains an outline of the development of the Bondact process, a list of suggested uses, and a series of before-and-after pictures showing the effectiveness of Bondactor-placed concrete in a variety of applications.—AIR PLACEMENT EQUIPMENT CO., 2525 SOUTHWEST BLVD., KANSAS CITY 8, MO.

Powered Pipe Threader—Bulletin is filled with useful information contributed by users of the Model C portable power threader as to where the machine was used, how it was used, and the effects achieved. Also listed are some interesting highlights concerning the versatility of the Model C when applied to operations unrelated to pipe threading.—BEAVER PIPE TOOLS, INC., 350 DANA AVE., WARREN, OHIO.

Standard Air Valves—For remote control of single and double-acting air cylinders are listed in Bulletin AV100. Types listed include button operated, lever operated, cam operated, clevis operated, and foot-operated valves. Most of these can be had with 2, 3, and 4-way valves, with and without spring return, and with open-end or piped exhaust.—THE BELLOWS CO., 222 W. MARKET ST., AKRON 9, OHIO.

Mobile Radiophone—General specifications and operating features of two-way mobile radiophones are listed in 4-p. bulletin. Specifications cover the transmitter, receiver, power requirements, controls, and dimensions. Bulletin describes the advantages of this equipment, and several types of accessories available for use with it.—BELMONT RADIO CORP., SUBS. OF RAYTHEON MFG. CO., 5921 W. DICKENS AVE., CHICAGO 39, ILL.

Floor Gratings; Safety Steps—Borden floor gratings and safety steps are illustrated and described in new catalog. Items listed include: Rectangular (mechanically locked) types; riveted (reticulated) types; steel safety steps with deluxe and standard nosing types; roadway gratings; steel floor armor; and standard fasteners for all types of Borden gratings. Safe-load table lists deflection and safe loads for various spans.—BORDEN METAL PRODUCTS CO., 884 GREEN LANE, ELIZABETH, N. J.

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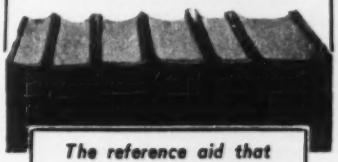

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READER COMMENT

Getting Water At a High Price

Sir: To get water, the City of Eden, Texas, recently drilled a well 4,200 ft. deep at a cost of $35,000. The yield was 175 gpm. (AMERICAN CITY, Dec. 1949, p 120).

The city must charge $1.50 for the first 200 gal., and 75¢ for the next 1,000 gal., etc.

This is an example of the idea I'm trying to convey (Let's Sell Water, ENR, Nov. 24, 1949, p. 39). Get water at whatever the cost. The cost is nothing compared to the value it has to the consumers.

FARLEY GANNETT
Consulting Engineer
Harrisburg, Pa.

Mechanized Prestressing

Sir: Your editorial on the test of the prestressed girder for the Philadelphia Walnut Lane Bridge (ENR Nov. 3, 1949 p. 18) correctly pointed out the weak spot—the need for more mechanization. Every American engineer, going home after having witnessed the test, must have had the impression that here was a European principle suitable for adaptation, but that the way this prestressed concrete was being made had still to be highly mechanized in order to score a success in the United States.

It is indeed to be regretted that for this first prestressed girder of large size in the U. S. no use has been made of the latest developments in the application of the prestressing technique. As a matter of fact the so-called "Blaton-Magnel system" used at Philadelphia for stressing and anchoring the wires is rather a laboratory technique than a practical, mechanized construction method.

During the past few years mechanization in the prestressing technique has reached a fairly high level in France and in some other European countries. Thus, instead of two wires being stressed at a time, and anchored afterward by wedges, twelve or eighteen wires are stressed and anchored in one operation by a special jack, designed by the famous French inventor of prestressed concrete, Mr. Freyssinet. This means a large economy on labor and time, and I am sure that American technical skill can develop this economical method still further.

Also the manufacturing of the concrete anchor-blocks for 12 of 18 wires has been highly mechanized. And finally the making of the thin metal sheath, introduced into the formwork before the pouring of the concrete to prevent bond between the wires and the concrete, has been mechanized. (EDITORS NOTE — The Freyssinet method was fully described in *Engineering News-Record*, Sept. 1, 1949 p. 186.

We in Holland are now developing still further this French mechanization, and we invite all the American engineers visiting Holland to see our works and get an impression of today's achievements.

In the same issue with your Walnut Lane bridge article appeared your book review of the British book by P. W. Abeles on "Principles and Practice of Pre-Stressed Concrete". I quite agree with your reluctance in anchoring prestressed wires on bond alone, although as far as this phenomenon is concerned, the stresses are less important than the thickness of the wires. In the Netherlands we only rely on bond when using very small wires (up to ⅛ in), and increase the bond very considerably by employing indented steel wires of 0.2 in. diam. These indented wires were originally used in Switzerland by Mirko R. Ros, for his extremely interesting "Stahlton" floors (a prestressed brick floor system) and are now generally employed in all Dutch precast-elements factories. I highly recommend indented wires to all American colleagues planning to make precast prestressed elements.

JAMES J. BOUVY
Consulting Engineer
The Hague, Holland

Credit for Desilting

Sir: The article "Schuylkill Desilting Program Effective" in your November 24, 1949 issue (p. 27), may give a somewhat misleading impression.

The facts concerning the progress in the cleanup of the river are correct. The Department of Forests and Waters through its Water and Power Resources Board is doing an outstanding work.

However, the work of removing the silt from colliery waste waters, which was a condition precedent to the dredging of existing deposits in the stream, and the issuing of orders for the preparation of plans and construction of works to abate sewage and industrial waste pollution come wholly under the Sanitary Water Board, the administrative board within the Department of Health, whose orders and policies are carried out by the Bureau of Sanitary Engineering of this department. Dr Vaux is Secretary of Health and chairman of this latter board, just as Admiral Draemel is Secretary of Forests and Waters and chairman of the Water and Power Resources Board.

We have no desire to minimize the accomplishment of Admiral Draemel and his department and board but do feel that Dr. Vaux and his board are entitled to proper credit for the removal of silt from colliery waste waters. This has resulted in the marked reduction in the silt burden carried by the river.

All of the collieries in the Schuylkill basin now treat their waste waters, and while the accomplishments in the Schuylkill basin have been sufficiently dramatic to attract most attention, outstanding progress has also been made in the other three anthracite coal fields as well as in the bituminous fields.

J. R. HOFFERT
Chief Engineer, Dept. of Health
Commonwealth of Pennsylvania
Harrisburg, Pa.

UN Radiant Heating Changed

Sir: The article describing the construction of the United Nations Secretariat (ENR, Dec. 29, 1949, p. 20) has been read with considerable interest.

At the top of the middle column on p. 22, it is stated that wrought iron coils have been used in the radiant-heating system for the first-floor lobby. I had understood that steel pipe was used for the coils in this installation and this has been confirmed by a recheck with the heating contractor.

Due to the widespread interest in this structure, it is felt that this error should be recognized and corrected

GEORGE D. LAIN
Research Engineer
Committee on Steel Pipe Research
American Iron & Steel Institute
New York, N. Y.

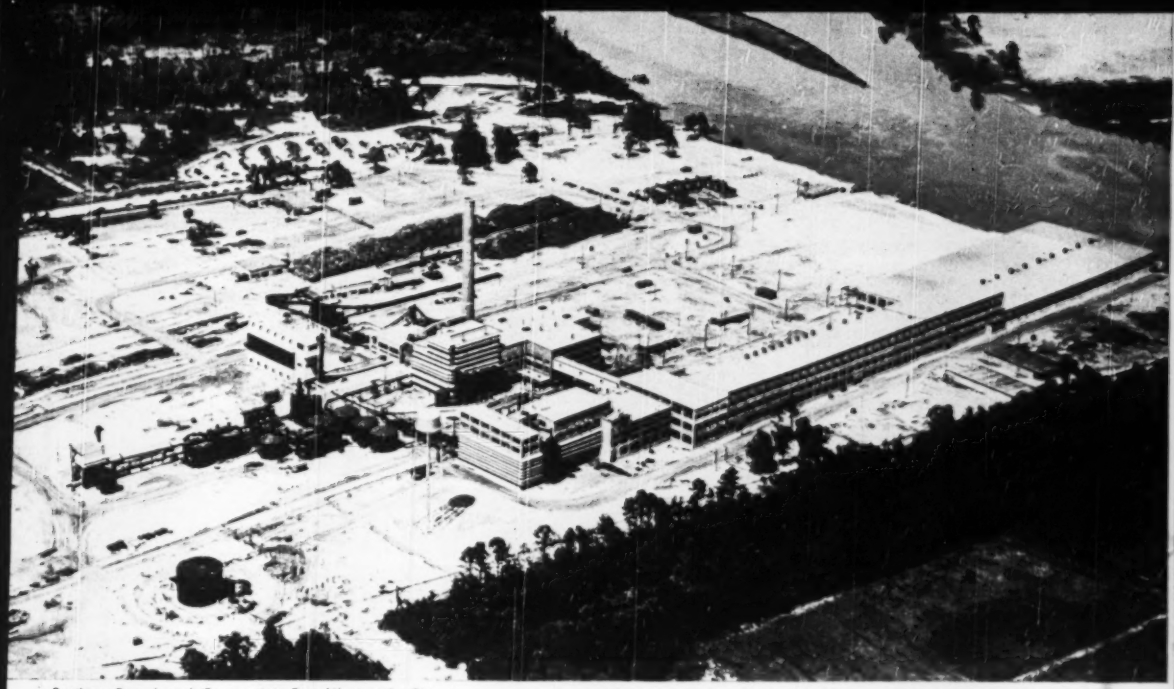
[Mild steel pipe was substituted for wrought iron in the lobby floor after designers and contractors had checked the manuscript. The change was probably made less than two weeks before the date of publication—EDITORS.]

Big Order

The Editor's mailbag weekly brings some strange requests for information and guidance. Last week, this one appeared, from a correspondent in Maine:

"Sir:

Please send me all information on engineering. Thank you."



Southern Paperboard Corporation, Port Wentworth, Ga. Archt. & Engr.—J. E. Sirrine & Co.; Contr.—Daniel Construction Co., both of Greenville, S. C. (Equipment grouted with Embeco non-shrink mortar.)

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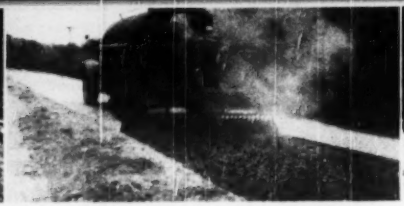
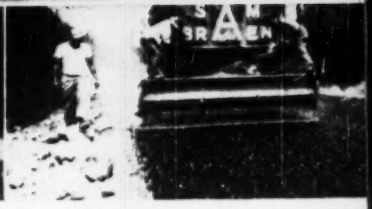
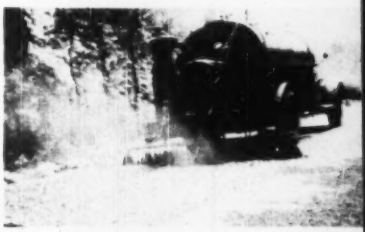


Applying Texaco Asphalt to 3-inch crushed stone wearing surface at rate of 1.78 gal. per square yard.

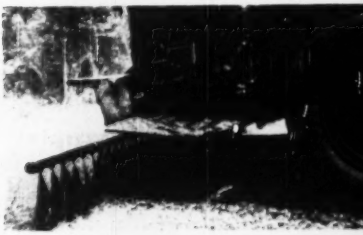


Spreading small stone to fill voids in the 3-in surface course.



The second application of Texaco Asphalt ca for 0.72 gal. per square yard.

Covering again with small stone to fill voi and insure dense, waterproof surface.



For a seal coat, Texaco Rapid-curing Cutbac Asphalt is applied at rate 0.28 gal. per sq. y

Completed Texaco Asphalt Macadam pavement is durable, easy-riding and skid-resistant.

Follow these steps

for a rugged, economical pavement

A long-lived pavement with a low upkeep cost, Texaco Asphalt Macadam calls for a minimum of large equipment in its construction. An asphalt distributor, roller, blades grader and trucks for hauling aggregate are the only large units required.

Texaco Asphalt Macadam is a good all-around pavement, equally satisfactory for roads, streets, airports or parking acreas. The aggregate for the foundation and the wearing surface may be crushed stone, crushed gravel or crushed slag, depending upon availability and cost.

Usually, asphalt cement serves as binder in a Texaco Asphalt Macadam pavement. However, in modified forms of this type of construction, a Texaco cutback asphalt or an emulsified asphalt is substituted for the asphalt cement.

For a complete description of Texaco Asphalt Macadam paving and its modified forms, send for the booklet, "Road Building with Texaco Asphalt by the Pressure Distributor Method."

Samuel Braen's Sons, Hawthorne, New Jersey were the contractors on this Texaco Asphalt Macadam project in Passaic County, N. J.

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TEXACO

REG. T. M.

TEXACO ASPHALT